The Bristol Medico-Chirurgical Journal.

"Scire est nescire, nisi id me
Scire alius sciret."

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SPECIALISM AND THE MEDICAL CURRICULUM, MAINLY IN REFERENCE TO OTOLOGY, RHINOLOGY AND LARYNGOLOGY.

The Presidential Address, delivered on October 8th, 1913, at the opening of the Fortieth Session of the Bristol Medico-Chirurgical Society.

BY

P. WATSON-WILLIAMS, M.D. Lond.,

Lecturer on Otology, Rhinology, and Laryngology at the University of Bristol; Hon. Aurist and Laryngologist, Bristol Royal Infirmary.

THE subject of my remarks, which I offer in thanks to this Society for having honoured me in electing me as its President, is a different aspect of the subject of a Presidential Address at the Laryngological Section of the Royal Society of Medicine in 1910, and again of my opening of a discussion at the Annual Meeting of the British Medical Association at Liverpool in 1912. Then I was addressing specialists on the "Education of the Specialist"; now, under the roof of our University, I plead the cause of the undergraduate and postgraduate student.

It is a mistake as to suppose, many of us do, that specialism in medicine or surgery is a modern innovation. In the Ebers papyrus are many allusions to various special regional affections, *e.g.* "When thou findest a growth on the throat of a patient . . . containing matter . . . and thou findest its stock raised like a wart, know that the matter moves within it." We find that the practice of surgery was distinguished from medicine even earlier than the thirteenth century B.C., and it is recorded that in Egypt each physician treated a single disorder and no more, some devoting themselves to the eye, others to the teeth (they made artificial teeth, and some have asserted that they have found traces of gold stoppings in the mummies), and others, again, devoted themselves to disorders of the intestines, while yet others were obstetric physicians called in by midwives to the difficult cases.

And we learn from the Ebers papyrus that in the thirteenth century B.C. (*i.e.* about 3,200 years ago) patients applying for relief to the medical temple at Thebes had to state their complaint, and that it was left to the principal of the medical staff to send the specialist best suited for the case. It would appear that only a few of the students remained to the end of their medical course at Thebes, the most gifted being sent to the celebrated faculty of Heliopolis, whence they returned to Thebes, where they became physicians to the court, and, attached to some priestly college, were consulted in serious cases.

Now in Great Britain, and later also in Ireland, the field of medical science was long occupied by rival schools of medicine and of surgery; hence perhaps arose our academical distinction between medicine and surgery peculiar to this country, for in practically every European nation except our own the degree of M.D. serves for all physicians, surgeons and specialists alike, their subsequent postgraduate differentiation is clinical, and not academical and dependent on the passing of certain examinations, as is the case with us. We attach such importance to the acquirement of innumerable useless minutiæ, that research work is in consequence comparatively rare, and is put, so to

speak, under a glass case, where it is admired but seldom touched by the common herd. Is it not better to train a student to think for himself and to investigate, instead of loading his mind with facts which for the most part he is not even intended to remember after he has passed the rubicon? What a misdirection of time and energy when we compel a young university graduate in medicine and surgery, with opportunities and ability for research work, to go back to the kind of anatomy required for our highest surgical diplomas!

This bowing of the knee to the Baal of examinations, which is characteristic of this country, coupled with the traditional restricted import of the academic labels of "physician" or "surgeon," has resulted in the tendency to regard specialities as accretions to the medical art and science, whereas they are more truly an intensive cultivation of relatively neglected areas in the common field.

Great contributions to the recent progress of medical work have mostly come from those who have had large opportunities for practical experience in relatively restricted fields of observation; and as a hospital clinic—medical, surgical, or special—affords peculiar opportunities for scientific investigations and advancement of knowledge, those who hold such offices should regard their posts as trusts, and as far as possible render themselves competent to make such opportunities fruitful and help one another in so doing, not for their own advancement, but for the credit of their school, for the benefit of the profession, and for the sake of humanity at large. The far-reaching later developments of the science and art of medicine have compelled us to realise that to be highly productive in the best sense we must revert to the very natural division of fields for research that obtained in Egypt so many thousand years ago.

When I was a student anatomy, physiology, and pathology were well taught by surgeons or physicians, one of the obstetric professors was, and only one of the clinical surgeons was not, a general practitioner; there was no pure ophthalmic surgeon and not one laryngologist in Bristol. But specialisation is now regarded as essential for those who are entrusted with teaching of

these subjects, and in the truest sense all have become specialists, for the pure surgeon or internal physician is as distinctly a specialist as the obstetrician, ophthalmologist, laryngologist or aurist, and not seldom more so. If, then, I use the word specialist in any further remarks in the more usually accepted sense, I at least recognise the folly of trying to separate sheep from goats in the medical flock. As for myself, if you will pardon a personal note, I was quite determined never to become a specialist in diseases of the ear, nose and throat, when with a view to becoming a physician and specialising in the organs of respiration I published a short work on the upper respiratory tract, intended as a prelude and introduction to a second volume on the lungs and pleura. Fortunately or unfortunately, my first volume seemed to meet a want, and moreover served to make me realise how little I knew of a most interesting and hardly explored territory, which lured me on till it secured my undivided attentions. My colleagues at the Royal Infirmary were good enough to respond to my suggestion in 1889 that I should initiate a clinical throat department, and it is owing to them that it has fallen to my lot to share in the development of modern laryngology. Up to that date the special equipment for diseases of the throat and nose consisted of a mottled laryngoscopic mirror, one Thudicum speculum, a Mackenzie tonsillotome, and a pair of Loewenberg forceps, the latter rarely used, as adenoids were almost unknown, and when diagnosed were mostly scraped with a finger-nail. In 1887 we began to hear of intubation as an alternative to tracheotomy, and as a Resident at the Royal Infirmary I inserted a tube in a diphtheritic larynx, I believe the first case in this country, and great was my relief when the urgent dyspnœa almost instantly gave place to calm breathing. Since that time laryngology has been enriched by the acceptance of Semon's work on the innervation of the larynx and the early diagnosis of malignant growths of the larynx and their successful operative treatment. Œsophagoscopy and bronchoscopy have been simplified and rendered practicable by Killian, Chevalier Jackson, Brünings and Hill, to mention only a few of the laryngologists to whom we owe

these advances, and which we in Bristol have utilised in the throat department since 1904.

The relative ease with which a bronchoscope can be passed has been demonstrated at the meetings of this Society. Nothing could more clearly demonstrate its far-reaching achievements than the case of a patient in whom a nail had become implanted for a long period in a second division bronchus, when Killian was able to dilate the cicatricial contraction, extract the nail and implant a gold collar, which the patient wore to keep that part of the bronchial tube patent.

In rhinology the pathology, diagnosis and treatment have been practically a new field opened up, and in otology Bárány's work on the diagnosis and Lake's on the operative treatment of labyrinthine disease have led the way, and made possible the relief in a group of affections which before then were almost untouched by clinicians.

To mention only these few of the many directions of advance must suffice to show that the territory is by no means narrow. No speciality can thrive and progress in sound directions unless its votaries return constantly to drink at the common fount of medical knowledge. So likewise its culture never fails to enrich the common ground in almost every corner of the medical field. As an example in point I invite you to glance at just one small corner of rhinology, and that only in so far as it bears on the work of other departments.

The nose in relation to disease of the eye is a subject that has of late years engaged the attention of many rhinologists and ophthalmologists, so that the literature of the relationship between diseases of the nose and eye is already very extensive, but many debatable points remain to be elucidated. Nor is it by any means a new subject, for Berger devotes seven pages to it in his treatise *Les Maladies Des Yeux dans leurs Rapports avec la pathologie générale* (Paris, 1892). But rhinology, then in its infancy, has advanced, and with improved clinical methods of investigation, and a fuller knowledge of the regional anatomy, many eye conditions may be proved to have their source in

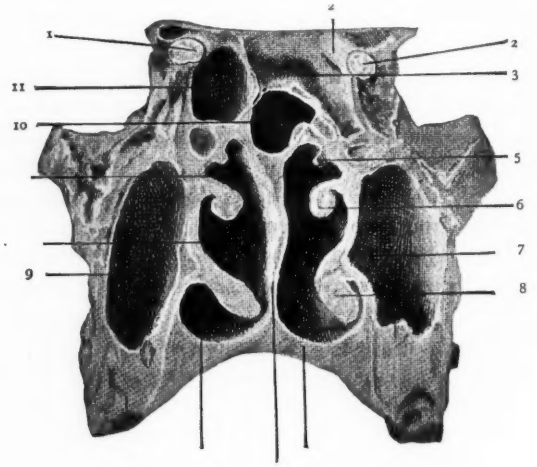
the nose, where formerly such causes were seldom looked for or even suspected.

It must suffice to direct attention to the four excellent preparations by Onodi, which by his courtesy I am enabled to introduce to illustrate some of the more important anatomical relationships of the orbit and nasal passages and sinuses.

FIG. 1.

SECTION BEHIND THE FIRST MOLAR TOOTH.

The right sphenoidal sinus is fairly normal, but the left is quite small and almost central, being encroached on by the backward extension of a large posterior ethmoidal cell. The right optic canal traverses the upper and outer wall of the right sphenoidal sinus, but the left sphenoidal sinus is not in relation with the left optic canal, which passes across the upper and outer part of the left posterior ethmoidal cell.

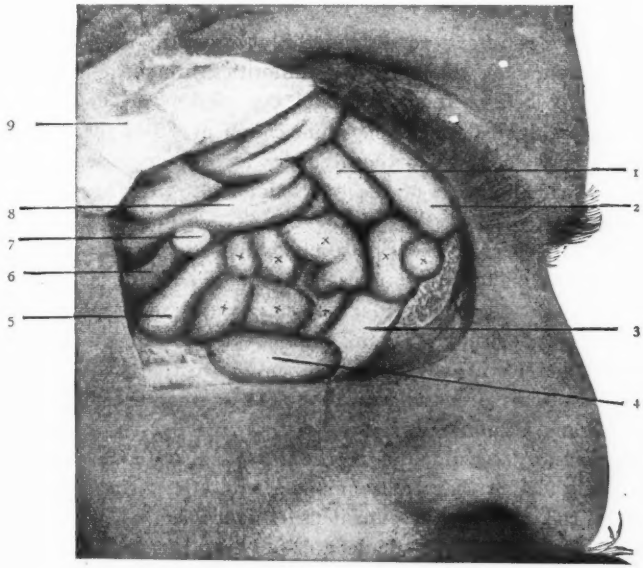


1. Right optic nerve.
2. Left optic nerve.
3. Left posterior ethmoidal cell.
5. Superior turbinal.
6. Middle turbinal.
7. Left maxillary antrum.
8. Left inferior turbinal.
9. Right maxillary antrum.
10. Left sphenoidal sinus.
11. Right sphenoidal sinus.

ONODI.

FIG. 2.

A HEAD WITH THE ORBITAL WALLS REMOVED.



The preparation shows the relations of the roof, inner wall and floor, to the frontal lobe and optic nerve and nasal accessory sinuses.

1. Recessus orbitalis.
2. Frontal sinus.
3. Nasal cavity.
4. Maxillary sinus.
5. Sphenoidal sinus.
6. Internal carotid artery.
7. Optic nerve.
8. Frontal lobe.
9. Dura Mater.

× × Anterior and posterior ethmoidal cells.

ONODI.

Berger in 604 cases of orbital inflammation found that 407 were due to nasal accessory sinus disease; while Birch-Hirschfeld, from an analysis of the records of the Leipzig eye clinic, showed that out of 684 cases of orbital inflammation no less than 409,

or 59.8 per cent., were due to sinus inflammation, and further states that if an examination of the nasal sinuses had been made in every case the percentage would have been higher still.

I do not intend to discuss the accuracy of these figures cited from such distinguished authorities in ophthalmology, though I believe that in Bristol eye clinics we should not find these figures accepted without comment. But there is no longer any doubt as to the necessity for rhinology depending on the collaboration of the ophthalmologist in a very large percentage of sinus cases.

I pass over all the eye complications due to neoplasms, benign or malignant, originating in the nose or accessory sinuses, and those due to mucoceles, these as a rule being mainly displacements of the bulbus, at least in the earlier stages, and I will only allude very briefly to the orbito-ocular manifestations of nasal sinusitis. The normal nasal mucous membrane is sterile, when it becomes infected the resulting inflammatory reaction may prevent the infecting organisms reaching further than the submucosa, and after losing more or less of the ciliated epithelum it usually recovers.

With a more virulent infection the deep periosteal layer is infected, and an acute, subacute or chronic infective periostitis may remain, the case becoming one of chronic sinusitis. The mucosa becomes œdematous, and consequently the small apertures by which the sinuses communicate with the nasal passages are much occluded with retention of secretions, under more or less pressure. If the efferent lymphatic vessels in the deeper layers of the mucosa become permanently blocked, there is the formation of œdematous polypus (as I described in my Long Fox Lecture). With polypus formation either in an accessory sinus or its aperture, or in the nasal mucosa near it, the examination of the infected periosteum often shows evidence of an underlying rarefying and formative osteitis, and while spicules of new bone may be produced in other directions, the bone is softened or absorbed.

Such processes tend to involve the walls of the infected sinus

Plate I.

SAGITTAL SECTION OF A HEAD.

Section showing the relations of the nasal accessory sinuses to the base of the brain, etc. (left side). Note especially that the optic canal traverses the sphenoidal sinus in this subject, so that rough instrumentation would involve risk of serious injury to the optic nerve, while suppuration in the sinus would probably lead to involvement of the optic nerve sheath. Observe too that the left frontal sinus extends well back, and that this left sinus is encroached on by that of the right side.

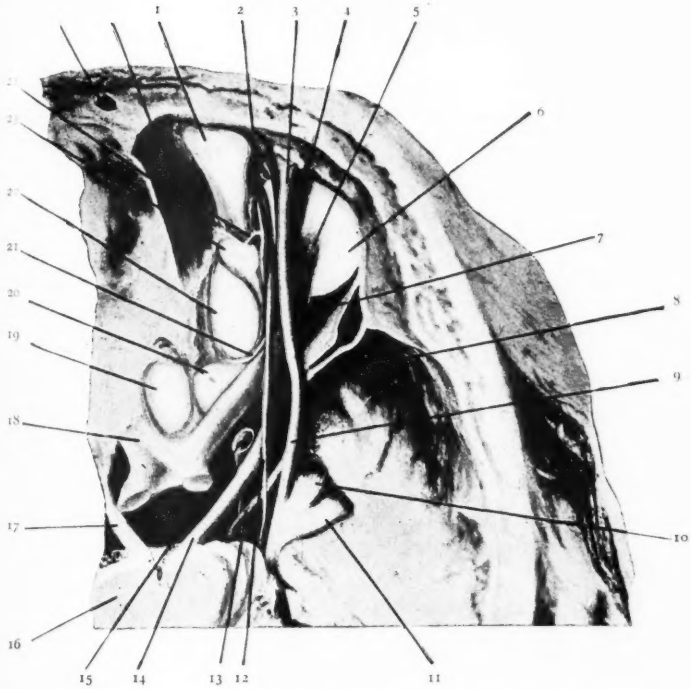
1. Left optic nerve.
2. Right frontal sinus.
3. Right ethmoid cell.
4. Left frontal sinus.
5, 6. Ant. ethmoidal cells.
7. Ethmoid bulla.
8. Inferior meatus.
9. Middle meatus.
10. Superior meatus.
11. Optic Canal.
12. Left sphenoidal sinus.
13. Internal carotid artery.

Onodi

From Watson-Williams's "Rhinology."

Plate II.

THE ANTERIOR FOSSA.



The roof of the right orbit of the corresponding nasal accessory sinuses has been removed, so as to display the relations of the orbital contents beneath the roof with the ethmoidal cells, sphenoidal cells, etc.

1. R. frontal sinus.
2. Superior oblique muscle.
3. Supra-orbital nerve.
4. Levator palpebræ muscle.
5. Rectus superior muscle.
6. Eyeball.
7. External rectus.
8. Scala media.
9. Trigeminal nerve, first div.
10. Trigeminal nerve, second div.
11. Trigeminal nerve, third div.
12. Trochlear nerve.
13. N. abducens.
14. Oculomotor nerve, right.
15. Internal carotid artery.
16. Pons.
17. Oculomotor nerve, left.
18. Optic nerve.
19. L. sphenoidal sinus.
20. R. sphenoidal sinus.
21. Ethmoid nerve, posterior.
22. Posterior ethmoid cell.
23. Anterior ethmoid cell.
24. Ethmoid nerve, anterior.

ONODI.

From Watson-Williams's "Rhinology."

in all directions. Take the case of an ethmoidal cell with its bony wall alone dividing the nasal passages from the orbital cavity, so thin that the inner orbital wall corresponding to the ethmoidal cells is called the lamina papyracea. We see how readily absorption of the thin wall may result in a perforation, a ready portal for infection of the orbital periosteum, while the frequent existence of congenital dehiscences often provides a ready-made way open for an infective invasion taking place before there is time for a perforation of the bony wall to be produced pathologically. However, the lymphatic and venous vascular communications normally existing between the sinus mucosa and the orbital periosteum are even more frequently the route for infection spreading from the nose to the eye, and although fortunately in only a small percentage does such infection result in orbital subperiosteal abscess or orbital cellulitis or phlegmon, in a very large number there are slighter evidences in the form of fugacious erythema or œdema of the forehead, eyelids or neighbouring tissues, swelling of the lids, conjunctival injection, chemosis, etc. Frequently errors of refraction develop either from the general neurasthenia result or from the direct toxic infection of the musculature of accommodation. Spectacles will correct the refractive errors, but the relief is relative and incomplete if the essential cause of trouble is untouched.

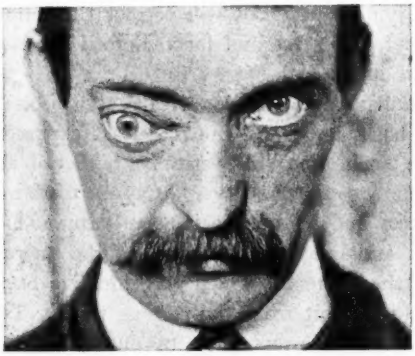
The maxillary antrum seldom causes an orbital phlegmon, the cavity being large and the roof least exposed to risks of perforation, but it often causes errors of refraction and weakness of vision, the "readily tired eye." Carious teeth may cause an orbital abscess, and in young persons, as Parinaud has explained, the venous and lymphatic channels of the unerupted tooth-buds form the route by which the infective organisms gain entrance to the orbit from the carious teeth. Two examples have been brought to my notice by our colleague, Mr. Fawn. These cases are prone to be very virulent and even fatal in event. One of Fawn's patients five years previously had iritis in the left eye, which became cured very quickly after the removal of a dead suppurating tooth, but on this later occasion

she had marked iritis in the left eye, which grew steadily worse under the usual treatment for iritis, but rapidly subsided after the extraction of a decayed upper molar, both upper second pre-molars and some incisor pivots, all in a bad state. The second case which also developed irido-cyclitis not yielding to routine treatment, was rapidly cured after the extraction of diseased teeth.

The frontal sinuses, unless a perforation of the floor occurs, usually influences the eye through the fronto-ethmoidal infection that is nearly always present, either as cause or result of frontal sinus infections.

A case of cerebro-spinal rhinorrhœa associated with right frontal sinus and antral suppuration and nasal polypus is here illustrated, as it affords a good example of anatomical irregularity leading to fatal complications. The anatomical opening in the dura mater resulted in a fatal meningeal infection by the frontal sinus discharges. The case is fully reported elsewhere.[1]

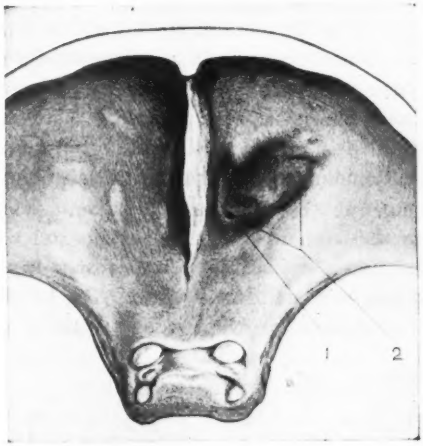
FIG. 3.



Right eye displaced downwards and outwards by retention of cerebro-spinal fluid in the orbit above and behind right inner canthus.

[1] *Proc. Roy. Soc. Med. Lond.*, 1913, vii. 2.

FIG. 4.



1. *The opening in the dura mater through which it is presumed the cerebro-spinal fluid escaped into the right nasal passage.*
2. *The dark area corresponds to the large dehiscence in the bone of the orbital roof.*

It is the ethmoidal cells and sphenoidal sinuses that are most frequently the cause of orbito-ocular lesions, and while the anterior ethmoidal cells are not seldom the cause of orbital subperiosteal abscess or phlegmon, the posterior ethmoidal cells and sphenoidal sinus are the most constant source of optic nerve and therefore retinal affections.

My own cases seem to warrant the statement that, "speaking generally, temporal visual field contraction is usually associated with sphenoidal and posterior ethmoidal cell sinusitis, while general concentric contraction of the visual field is more usually found to be due to suppuration in the anterior group." [1]

One of the most valuable of many recent researches on the influence of sinusitis in causing visual field changes is that of Wallis, [2] who carried out his investigations mainly in the ear,

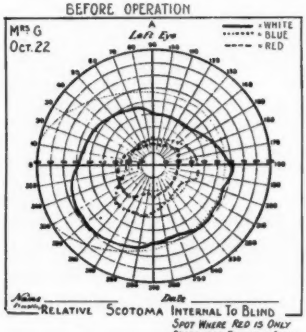
[1] Watson-Williams, *J. Laryngol.*, 1912, xxvii. 18.

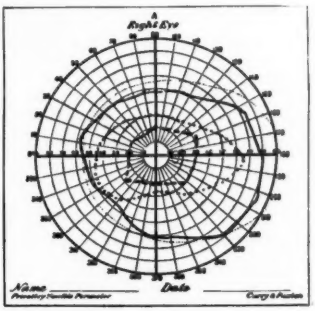
[2] "The Visual Fields in Sphenoid Sinusitis," *J. Laryngol.*, 1911, xxvi. 242.

nose and throat clinic of our Royal Infirmary, and also at the Eye Hospital.

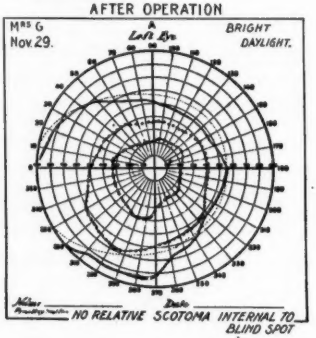
An example in point occurred in the wife of a medical man who had complained of supraorbital headaches for nearly three years, and of a sense of stoppage, and a bad smell and taste "coming from the back of the nose." The most careful examination of the nose failed to reveal any purulent secretion except a small amount of muco-pus in the left olfactory fissure, and syringing out the maxillary antra only yielded a few flocculi from the left antrum. Exploration and lavage of the sphenoidal sinuses also gave no definite result, beyond a small quantity of mucus from the left sinus. Dr. Leighton Davies examined and reported on the vision, "There is a slight but

BEFORE OPERATION





AFTER OPERATION



unimportant contraction of the right field, but the left shows a distinct limitation of the visual field on the temporal side, and a small relative scotoma to red, internal to the blind spot. This had been observed several times, and I think it would have gone on to a complete scotoma to red." One month after I had performed a left intranasal antral operation with free removal of the anterior wall of the sphenoidal sinus, followed by lavage, the ophthalmic report was that " the left visual field showed marked improvement in the field for white as well as blue, and the disappearance of the relative scotoma. This shows, I think, quite clearly the need for radical operation in order to stop the progress of an early retrobulbar neuritis."

When orbital subperiosteal abscess, or orbital phlegmon, is suspected or diagnosed as due to nasal sinus disease, one should inspect the corresponding orbital wall, by an external incision and raising the orbital periosteum, so that one can see the bone, note any patch of softening, or any perforation. Even if deep-seated orbital cellulitis has developed one can by proceeding subperiosteally evacuate any subperiosteal abscess, and if necessary incise the orbital periosteum so as to drain or make applications to the orbital phlegmon.

As an example of eye complications from aural disease, I may refer to paralysis of the sixth nerve, which occurs most frequently following acute infection, and there are at least fifty-five cases on record, while I have had one case myself. Probably the infective inflammation extends forwards to cellular spaces on the apex of the petrous part of the temporal bone, through communications from the apical cells to the carotid sheath, or else by way of the cells around the Eustachian orifice and floor of the tympanum, and from thence to the fibrous sheath of the sixth nerve in Dorello's space.

But the physician, too, is often brought into direct relationship with the accessory sinus. Very many cases of so-called migraine are in reality examples of nasal sinusitis, and recurrent headache is as frequently due to similar nasal conditions as to errors of refraction. Quite recently a boy was admitted at the Royal Infirmary semi-conscious and believed to be a case of

tubercular meningitis, but *post-mortem* it was found to be meningitis resulting from ethmoidal cell suppuration. In another case that occurred some years ago a girl was unconscious with symptoms of meningitis, but she had marked exophthalmos with turgid œdematous lids. A diagnosis of sphenoidal sinusitis with resulting cavernous sinus-thrombosis was diagnosed and confirmed *post-mortem*. Unfortunately she was seen too late for treatment to be of any use.

To even touch on the very numerous conditions in which a simple laryngoscopic examination throws light on bulbar lesions, pulmonary affections, aneurysms, or intrathoracic tumours, or a nasal inspection reveals the cause of recurrent bronchitis, hoarseness, dyspepsia, mental depression, and often, very often, mental aberration and suicidal impulses, would occupy too much time. But there are many fruitful fields for investigation still open, *e.g.* the nose as a route of infection in meningitis, *e.g.* cerebrospinal meningitis, nasal suppuration as a cause of appendicitis, rheumatoid arthritis, and so forth.

The University of St. Andrews, the National University of Ireland, and the Conjoint Board in Ireland of the Royal Colleges of Physicians and Surgeons are, I believe, the only corporations where such a definite clinical course is obligatory, *as well as examination by specialists*. Edinburgh, one of the most advanced centres as regards our speciality, with its splendidly organised teaching clinic, second to none in the United Kingdom, allows its candidates for graduation at the university a choice between pediatrics and oto-laryngology. One may well ask why both are not required.

Several universities in this country do insist on students attending a special clinic; others do not even go this far. But unless modern methods of professional examinations are to be applied to the special branches, the student is practically invited, and often compelled, to confine his serious attention to those subjects which help him to graduate, for the obvious reason that he has to satisfy examiners, and usually feels that he must devote his attention to the subjects on which he will be marked. Students should be both trained and examined

by teachers who possess as thorough knowledge of otology and laryngology as we expect of the teachers and examiners in medicine, surgery, or gynæcology.

Special subjects should always be separately represented on the faculties of the universities and teaching schools by the heads of departments concerned. In our own University neither ophthalmology nor oto-laryngology are represented as such on the Medical Board, and when the clinical side of a medical school is in advance of the academical, the latter loses due perspective and proportion.

Is it not deplorable that even yet medical practitioners are frequently sent forth as qualified men without adequate *elementary* training in diseases of the nose, throat and ear, despite the fact that the curriculum has been extended for the express purpose of meeting this well-known defect ?

In the Dominion of Canada the universities are more progressive, for the various provincial licensing boards not only demand attendance upon the subject during the student's career at college, but also have an examination upon them for the licence to practice.

It is not quite fair to the student to insist on a paper acquaintance with a large number of surgical procedures which he can hardly ever utilise, and send him out into practice to lament his inability to deal with cases which come before him almost daily.

I cannot help feeling that some of the student's time which is now taken up in acquiring book knowledge of rare and difficult operations would be more usefully employed in gaining further acquaintance with departments of practice that they will find valuable in whatever direction their postgraduate work leads them, and on which they now often are completely ignorant on the day they are "qualified."

Again, it is small consolation to a practitioner to realise that his eighteen months or more dissecting and learning anatomy enables him to distinguish between the right and left pisiform though he cannot differentiate ordinary catarrhal from nerve deafness, or look into a nose and see whether an obstruction is a polypus or a congested turbinate ; or to examine a larynx and recognise a paralysed vocal cord or a tuberculous ulcer.

PROTECTIVE FERMENTS.

BY

I. WALKER HALL, M.D. Vict.

Professor of Pathology, University of Bristol, and Pathologist to the Bristol Royal Infirmary.

THE tissues are protected from the entry of heterologous proteins by action of the digestive apparatus. The food enters the body proper, except during gastro-intestinal catarrh or ulceration, in a form suitable for the capacities of the various types of cellular metabolism; namely, as amino-acids, or altered proteins, etc. The further building up, or breaking down, of these substances depends upon the characters of individual cells. The means employed for this purpose are strictly specific. For instance, it has just been shown that the blood serum of a dog will hydrolyse muscle protein derivatives (peptone), but not the proteins, of dog's muscle, or of cat's muscle, and *vice versa*. There are, however, group reactions, for fox serum hydrolyses dog's muscle peptone, and dog's serum hydrolyses fox muscle peptone.

When heterologous proteins or other food substances reach the tissues without being previously broken down or changed into homologous proteins, they are regarded apparently as of the nature of foreign bodies, and methods are evolved for their removal. The most reasonable way by which they can be prepared for removal is along the lines of ordinary alimentary digestion. The substances which effect this "protective" type of digestion do not occur normally in the tissue cells themselves. There is a sufficiency of substances for the cleavage of amino-acids, etc., that is to say, peptolytic ferments, but neither tryptic nor peptic enzymes. What is to be done? The tissues have to rise to the emergency, and produce the means for dealing with the foreign body in question. Some

days elapse before the necessary capacity for bringing this about is attained. A similar delay occurs, it will be remembered, in connection with the appearance of such antibodies as agglutinins and lysins.

The presence of these new powers is manifested by a change in the characters of the blood serum. This change may be demonstrated in several ways. In one, purified albumins are prepared from the foreign proteins: serum containing specific ferments is then allowed to act upon the pure albumin, and the resultant products are separated by dialysis and subsequently identified. In another method, peptones derived from the heterologous protein are examined in a special form of polariscope, and the deviations read from time to time. Both methods are at present in process of refining, and much care is needed if more or less obvious fallacies are to be avoided. The technical difficulties are discussed in the references appended.

One of the practical applications of this experimental work, carried out in Berlin and Halle at the instigation of Abderhalden, is a test designed to assist in the diagnosis of pregnancy during the first months. Schmorl has shown that the placenta allows the transmission of chorionic cells, or placental albumin, into the maternal blood stream. The albumin is neither broken down into amino-acids nor re-constituted into homologous albumin, so that it circulates as a foreign albumin in the blood stream, and acts as a stimulus to the formation of " protective " ferments. These ferments are produced in due course, and may be demonstrated in the blood stream as early as at the end of the first month. It should be borne in mind, however, that these ferments are anti-placental and not anti-fœtal. The test tells, therefore, whether placenta is present or not. The results accumulated from sources all the world over, including a fair number from Bristol during 1912 and 1913, go to show that about ninety-five per cent. of pregnant and one per cent. of non-pregnant women yield serum giving a positive reaction. Carcinoma and fever seem to interfere with the sharpness of the reaction. One case is reported in which blood serum obtained

from a male gave a positive reaction: whether this was a case of suspected chorio-epithelioma is not stated. The reaction has been found negative in two cases of placental polypi and retained placental tissue. The position appears to be as follows. A serum test for pregnancy is on its trial, its technique will most probably be improved as time goes on. At present it may be regarded as a useful adjuvant to clinical signs, and may afford aid also in the differentiation of pregnancy from tumours of the uterus and adnexa. It may with advantage be associated with an estimation of the urinary creatine, which shows an increase very early in pregnancy. It may help to distinguish between slight and severe cases of eclampsia, and may even afford some indication of its onset. Apart from the difficulties of the technical procedures, there are some fallacies connected with the collection of the blood. The serum should be free from hæmoglobin if the ultimate reading is to be definite. It must, therefore, be collected very gently, and not disturbed during the process of coagulation. A stay of four hours in an ice chest is preferable. 5 c.c. of blood are necessary, and he upper layers of the serum are used after repeated centrifugalisation. The test must be carried out before the blood has become old, for if any decomposition has taken place, and ammonia has been formed, the results are of little value.

Another application relates to the presence of specific "protective" ferments in the blood serum in certain diseases. For instance, Fausser states that in *dementia præcox* the patient's serum is able to break down testicular and brain tissue. In syphilis and para-syphilis a similar action upon coagulated nerve proteins is present. In thyroid lesions there is a cleavage of thyroid albumin, although this is less marked.

In thirteen cases of persistent thymus the blood serum formed peptones from albumins prepared from thymus tissue, and thus indicated the presence of status lymphaticus and lymphatism, confirmed in some of the instances by operation or autopsy (Bauer). From the control standpoint, Lampè has shown that normal serum does not alter proteins prepared from

thyroid or thymus, or liver, or pancreatic, or supra-renal, or ovarian, or testicular, or muscular tissue.

If albumins are prepared from atrophic muscle fibres and serum obtained from patients suffering from muscular atrophy in cases of cornual changes, or disseminated sclerosis or of tabes, s allowed to act upon them, peptones are formed from the albumins.

In pneumonia it has been found that the blood contains ferments which act specifically upon albumins prepared from the pneumococcus. The feature is most evident at the period of crisis, and may have something to do with its onset.

A considerable amount of work is now being carried out in order to determine whether the blood serum of carcinomatous individuals possesses protective ferments against cancer cells; whether the presence of lymphadenoma may be similarly diagnosed, and so on. It is quite possible that the inhibitory effects of carcinomatous extracts upon the rate of division of paramecium may be due to substances of an allied nature.

The field for further investigation is a very large one. So long as it is left to those who are working at it, well and good. It is not yet ready for the casual labourer. The outlook is full of promise, and the next two years may witness remarkable developments. In the meantime, our standpoint must perforce be embodied in the popular catchword, " wait and see ! "

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ON THE CEREBRAL SYMPTOMS OF LOBAR PNEUMONIA IN CHILDREN.

BY

F. H. EDGEWORTH, M.D., D.Sc.,

Physician to the Bristol Royal Infirmary and Professor of Medicine, University of Bristol.

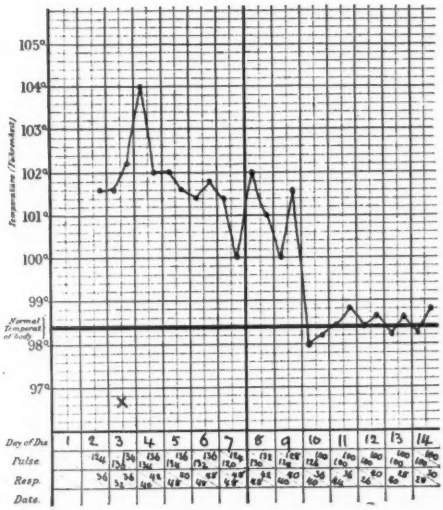
IT has long been known that children suffering from pneumonia may show signs of disturbance of the central nervous system which accompany those due to the pulmonary condition. Considerable difficulties in diagnosis may occur in such cases, and it is the object of this paper to indicate the means whereby, in some at least, a true opinion as to the nature of the illness may be arrived at.

Eight cases are recorded. They have been under observation at the Bristol Royal Infirmary during the last seven years. During the same length of time some sixty-three cases of lobar pneumonia in children were admitted to my wards, so that it would appear that about one case in eight shows signs of cerebral disturbance.

In the short histories here given the actual dates of admission are omitted, and the dates of appearance of the phenomena are stated in relation to the illness. The temperature charts are so constructed that the first day of the disease occupies the first left-hand column, irrespective of the day of admission. The abrupt onset, so characteristic of lobar pneumonia, permits of this being done with fair accuracy. The varying duration of the fever and the onset of pulmonary physical signs (marked by a cross) can thus be seen at a glance.

Case 1.—Freddie R., aged 11, was admitted on the second day of his illness. On the previous day he had come home from

school with headache, pain in the stomach and vomiting, and grew worse, continuing to vomit, and having incontinence of urine and fæces. On admission he was found to be in a semi-comatose condition, lying curled up in bed and resenting being touched, with marked retraction of the head. The tongue was furred and dry. No abnormal physical signs were present in chest and abdomen. The knee-jerks were present, but not exaggerated. Kernig's sign was present. On the third day it was found that the breath sounds over the upper part of the

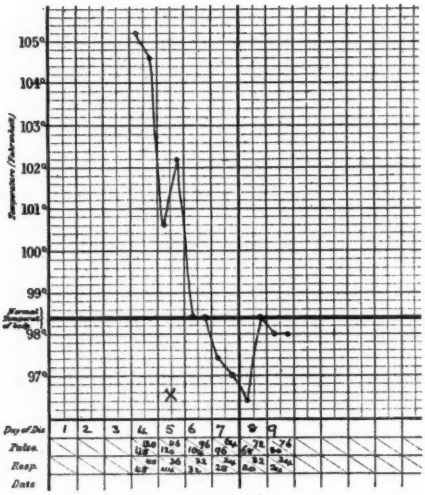


CASE No. 1.

right lung were harsh in character, and on the fifth day the upper part of the right side of the chest was dull on percussion, with bronchial breathing and a few crepitations. Kernig's sign was still present. On the eighth day the legs could be raised to an angle of 60° with the trunk, on the twelfth to an angle of 75°, and on the sixteenth to a right angle. Meanwhile—on the tenth day—a crisis in the temperature took place with great improvement in the general condition. Convalescence was rapid.

Case 2.—Marion H., aged 8 years, was admitted on the fourth day of the disease. During the previous three days she

had suffered from headache and repeated vomiting. She was found to have a temperature of 105.2°, a weak, regular pulse of 128, and a respiration rate of 48. She had a hot, dry skin and flushed face. No inequality of chest movement could be detected and no abnormality was found on examination. The spleen was just palpable, the liver not enlarged, and the abdomen normal. The knee-jerks were obtainable on reinforcement. The plantar reflexes were flexor in type. On the fifth day physical signs of pneumonia were found in the right upper lobe—dulness on

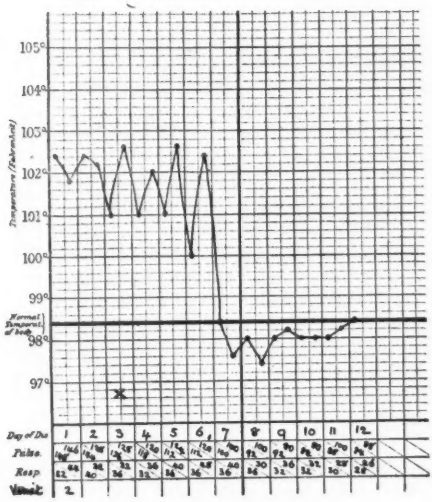


CASE No. 2.

percussion, increased vocal fremitus and resonance, bronchial breathing, and a pleural friction sound in the axilla. Herpes had developed on the left side of the mouth. On the sixth day a crisis occurred, and the patient soon recovered.

Case 3.—Gilbert J., aged 11, was admitted on the first day of his illness. He had been quite well until that morning, when he complained of frontal headache, thirst and feeling hot. He did not shiver or vomit. On admission he was found to be a well developed boy, lying in a semi-comatose state, though crying out and wriggling on being examined. The pupils could not be tested with accuracy owing to the patient's movements. The pharynx and tonsils were very red. No abnormality could

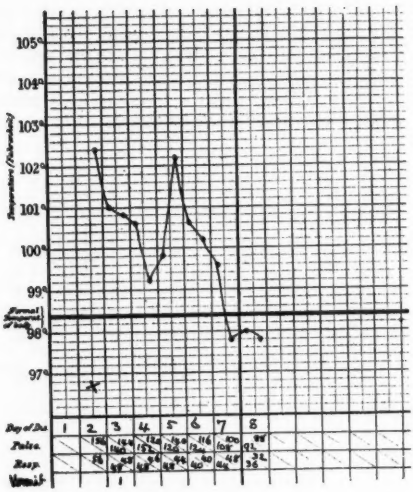
be detected in chest or abdomen. The knee jerks were absent, an extensor plantar reflex in both feet, and Kernig's sign on the left side only. Incontinence of urine. A throat swab was taken, and showed the presence of Hoffman's bacillus and staphylococci. The cerebro-spinal fluid was clear, not under pressure and contained no cells or micro-organisms. On the second day



CASE No. 3.

no change had taken place. On the third day there was dulness on percussion at the right apex down to the third rib, with distinct tubular breathing and pleural friction, but no crepitations. The general state had improved, and the patient was fully conscious. On the seventh day a crisis occurred, and the patient rapidly got well.

Case 4.—Daniel M., aged 3, was admitted on the second day of his illness. On the evening of the previous day convulsions had occurred, and there had been another attack on the morning of admission. He was found to have a temperature of 102.4°, a pulse rate of 156, and respiration of 56. At the base of the left lung there was dulness on percussion, high-pitched breath sounds and a few crepitations. The heart and abdomen were normal. He had a third fit about one hour after admission, but no others. A fall of temperature began on the sixth day, and

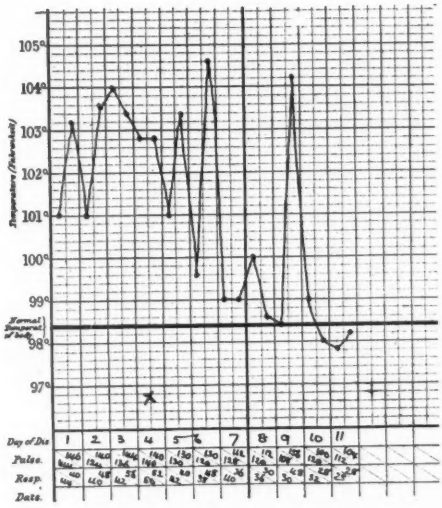


CASE No. 4.

was continued on the seventh—down to 97.8°. The boy quickly recovered.

Case 5.—Ernest G., aged 4, was admitted on the first day of his illness. He had had convulsions, though without any fever, on two previous occasions, and had been an in-patient sixteen and twenty-two months respectively prior to this attack. He was seized with convulsions about four hours before admission, and these had continued. He was found to be in a semi-conscious condition, with general twitchings occurring frequently. There was no paralysis of face, arms or legs. The temperature was 101°, pulse 144, very small and weak, and respiration 44. No abnormal physical signs were found in chest or abdomen. The pupils were equal, of medium size and reacted to light, and the corneal reflexes were present. Both knee-jerks were present and exaggerated; both plantar reflexes extensor in type, and Kernig's sign was present. The patient was put into a hot bath and given ol. ricini, followed by potass. bromidi and chloral hydrate. Three hours later he was found to be asleep. A nose swab was taken; this was reported to show Hoffman's, but no Klebs-Lœffler's bacilli. On the second day the convulsions had ceased, and the boy had slept well. The ocular fundi were found to be normal. On the fourth day the temperature was still high. A few crepitations and tubular breathing, with

dulness on percussion, were found at the right apex. Slight head retraction was present, and pain was complained of on pushing the head forwards. Kernig's sign was still present. The plantar reflexes had become flexor in type. On the sixth day the boy was better and did not cry when touched; the head retraction had disappeared. Kernig's sign was not so definite. Lumbar puncture showed the presence of clear



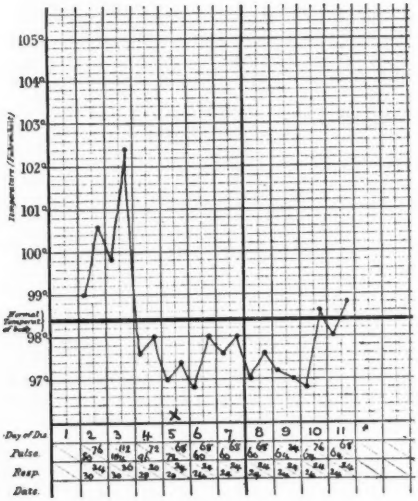
CASE No. 5.

cerebro-spinal fluid, not under pressure, and containing no organisms. The upper lobe of the right lung was in the same condition as on the fourth day. On the eighth day Kernig's sign was absent. On the tenth day a crisis occurred and the patient seemed much better. He was sent out well a fortnight later.

Case 6.—Lily M., aged 10, was admitted on the second day of her illness. On the previous day, when apparently in good health, she suddenly fell down in a fit, and since then had been in an unconscious condition, occasionally breaking out into a shrill cry. On admission, the girl was restless, unconscious, shrieking when disturbed. She lay flat on her back in bed. The face was red, but not cyanosed, with wide-opened mouth

and closed eyelids. The pupils were equal, of medium size, and did not react to light; the conjunctival reflexes were present, though sluggish. No abnormal physical signs were found in chest and abdomen. The knee-jerks were present, the plantar reflexes absent, and Kernig's sign was present.

On the third day Kernig's sign had disappeared, and the plantar reflexes were still absent. Nothing abnormal was found on examination of the lungs. Spinal puncture showed the presence of a clear cerebro-spinal fluid, not under pressure, and sterile on culture. On the fourth day a crisis in the temperature



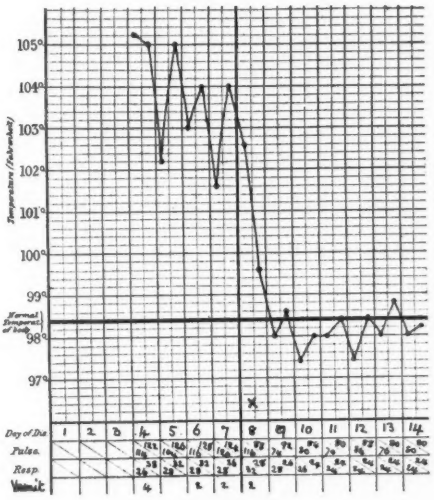
CASE No. 6.

occurred. On the fifth day the patient became partially conscious. Until this date there had been incontinence of urine and fæces. On this day, for the first time, a patch of dulness, the size of half a crown, was found at the base of the left lung, and in this area crepitations could be heard. On the seventh day consciousness was fully regained. Convalescence was uneventful.

At no time did the ratio of respiration to pulse rise above 1.3.

Case 7.—Dora M., aged 14, was admitted on the fourth day of her illness, which had begun suddenly with considerable pain in chest, abdomen and legs, vomiting, and a feeling of great

weakness. The vomiting had been incessant during the first three days; no rigor had occurred. She lay in bed in dorsal position, with flushed, anxious face, and rapid breathing. There was a herpetic eruption on the upper and the left side of the lower lip. The heart, lungs and abdomen were normal. No change in the physical signs occurred until the crisis. Every night until then she became maniacal. This was allayed by a

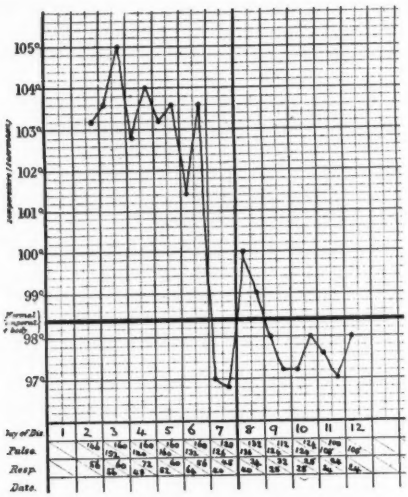


CASE No. 7.

hypodermic injection of morphia and strychnine. She vomited from time to time. On the eighth day a sudden fall in the temperature took place, and on this day, for the first time, fine crackling inspiratory crepitations with prolonged high-pitched expiration were heard at the base of the right lung. Convalescence was rapid.

Case 8.—Edward M., aged $1\frac{3}{12}$, was admitted on the second day of his illness. On the previous one he had begun to suffer from vomiting and diarrhœa. He was found to be a well-nourished boy, with a temperature of 103.2 deg., pulse rate 146, and respiration rate 56. The head was markedly retracted, and the whole back slightly arched, with rigidity of the muscles; the pupils were equal and widely dilated. The child was restless and cried on being moved. No abnormal physical

signs were found in chest or abdomen. This condition persisted until the seventh day, when a crisis in the temperature occurred, and the child improved. At no time were any abnormal physical signs found in the chest. After the crisis the head



CASE No. 8.

retraction and opisthotonus diminished, but were still present in less degree on the eighth day, and then disappeared. Convalescence was uneventful.

On comparison of these cases it appears that in all the fever, or at least the illness, set in abruptly, and in seven out of the eight cases fell by crisis after lasting from three to nine days. The date of appearance of abnormal physical signs in the chest was variable, from the third to the eighth day of the illness; but in six of the eight cases the normal respiratory-cardiac ratio of 1.4½ or 1.4 was changed to 1.3 or 1.2½, and this, taken in association with the history of abrupt onset and hot, dry skin, permitted an approximate diganosis of the pulmonary condition before the appearance of physical signs in the chest. In one case (7) the ratio was not altered, probably owing to the small area of lung affected, and doubt as to the cause of the fever

Two of the cases (4 and 5) showed Kernig's sign and an extensor plantar reflex. This combination usually indicates organic disease of the central nervous system. These cases, however, show that pneumonia in children is an exception ; I think here pointed out for the first time. The normal cerebro-spinal fluid and rapid recovery showed that no organic disease existed.

Coma, mania and head retraction did not persist beyond the crisis, and generally abated before this occurred. Kernig's sign, on the other hand, might continue for some days longer, *e.g.* in Case 1 the crisis occurred on the ninth day, whereas Kernig's sign lasted until the sixteenth day.

All the cases recovered and without complications. The occurrence of signs and symptoms of cerebral irritation in children suffering from lobar pneumonia does not apparently affect the almost invariably favourable prognosis which may be given.

The diagnosis of these conditions can usually but not always be made if the possibility of their occurrence be known. Headache, convulsions, vomiting may occur in any rapidly-developing fever in childhood, and the occurrence of coma or mania in the case of a continued fever would not be sufficient evidence of an organic disease of the central nervous system. But head-retraction, especially if associated with Kernig's sign, and possibly also with an extensor plantar reflex, is frequently indicative of meningitis, and if of sudden onset, of cerebro-spinal meningitis. A distinction can generally be made by investigation of the pulmonary condition, as mentioned above. If, however, the slightest doubt remains it is advisable to puncture the spinal canal and investigate the cerebro-spinal fluid, for this does no harm in a case of pneumonia, and in cerebro-spinal meningitis allows of the all-important early injection of Flexner's serum.

persisted until the eighth day, when, coincident with the crisis, a small patch of dulness and crepitation was found at the base of the right lung. In another case (8) no physical signs of pneumonia were ever discovered, but the respiratory-cardiac ratio varied between 1.2½ and 1.2⅕, and the temperature dropped by crisis on the seventh day.

The symptoms of cerebral irritation which these cases presented may conveniently, though not quite accurately, be divided into those with which the illness began and those which accompanied the major portion or the whole duration of the pyrexial period.

The initial symptoms were headache, convulsions and vomiting. Headache and vomiting occurred either alone or in combination, whereas convulsions (as in cases 4, 5, 6) were not associated with either headache or vomiting. Headache and convulsions were transitory, and did not continue beyond the second day, whereas vomiting (as in case 7) might continue during the whole of the fever. This fact and its occasional association with diarrhœa suggest that, at least in some cases, it may be due to a direct toxic influence on the gastric mucous membrane and not the result of cerebral irritation. In no case did a rigor occur, as is so often the case in adults.

The more abiding symptoms of cerebral irritation were coma, mania, retraction of the head, Kernig's sign, and an extensor plantar reflex. In no case did any of these symptoms develop after admission to the Infirmary; they were present when the child was first seen, *i.e.* at dates varying from the first to the fourth day of the illness. This fact is of importance in the diagnosis, for when pneumococcal meningitis occurs as a complication of pneumonia the symptoms usually begin late in the illness. This complication is very rare, and I have not seen it in cases under twelve years of age.

Coma occurred in three cases, with or without head retraction, but in each case with Kernig's sign; mania in one case; head retraction in three cases, with or without coma, and in two cases with Kernig's sign.

MEDICAL OBSERVATIONS IN THE CLIFTON ZOOLOGICAL GARDENS, WITH NOTES ON THE BIRTH OF TWO RUSSIAN BEAR CUBS IN CAPTIVITY.

BY

A. J. HARRISON, M.B. Lond.,

Consulting Physician to the Bristol General Hospital.

SOME years ago, I gave to the Bristol Medico-Chirurgical Society a presidential address, which I designated as "Comparative Pathology."[1] It related chiefly to some of the diseases of animals as met with by me in our Zoological Gardens in Clifton. In those days but little was known and recorded of this branch of Comparative Pathology, which has now rightly assumed a very important position.

Time has gone on, and I have been asked if I would give a few more details. I am quite sure that most of us take an interest in animals, be they horses, dogs, cats, pigeons, canaries, etc., and are accustomed to give pet names to our favourites, and thus to identify them more closely with our own surroundings. In a very similar way we give—in our zoological collections—more or less familiar names to *wild* animals, and thus take them somewhat nearer to our affections. "Sallie" to a celebrated chimpanzee, "Jumbo" to a world-renowned elephant, and "Alice" to his companion, were names well-known a few years ago in our Regent's Park Gardens in London. "Hannibal," "General," "Jupiter," "Prince," "Queenie," "Victoria," have been and are (most of them) familiar in our own Clifton Zoo, and quite recently there has been an exciting competition over the name of the new Indian elephant, when "Rajah" won the day. The celebrated actress who has

[1] *Bristol M-Chir. J.*, 1894, xii. 273.

quite recently been amongst us, Sarah Bernhardt, had as a rather close companion a favourite tigress!

Well, these animals are subject to many complaints that human flesh is heir to. They have decayed teeth, and inferentially tooth-ache. They have enlarged internal organs, "liver," "spleen," etc., and in-growing claws, corresponding to our in-growing toe and finger-nails; inflammation of the lungs, "pneumonia"; inflammation of the covering of the lungs, "pleurisy" and "empyema," or of the bag of the heart, "pericarditis," or of the stomach, "gastritis," or of the intestines, "enteritis," etc., etc.

Nor are they free from some forms of cancer, of swellings and tumours. Our domestic pets are subject to like ailments, or they may be the means of conveying infection, measles, scarlet fever, ring-worm, even diphtheria, and a form of infectious pneumonia by going from room to room, or from one house to another. A few years ago a painful sensation was created in Paris and its vicinity by an infectious and very fatal form of pneumonia having been traced in its origin to a malady amongst parrots.

In my previous paper I gave an account of "Jupiter," a favourite lion, having an in-growing claw removed. The account got into the papers, and *The Standard* gave a long editorial and raised the question whether the necessity for operations arose amongst wild animals in their natural state, and also of what became of the bones of dead animals, for they were so seldom and so scantily found by hunters and travellers. Let me throw, if possible, a little light upon this interesting question. We had a hyena in the Zoo for many years, and this animal would grind up and consume the hardest bones which could be given to it.

Let us reflect for a few moments what this crushing power means. What power is exerted by the jaws of a hyena in breaking up say the leg-bone of a horse or the jaw-bone of a bullock? Experiments which were made with very great care and precision demonstrated that a crocodile weighing 154 lb. exerted a force of 308 lb. in snapping its jaws. The power

exerted by a hyena must have been very much more. We are in the habit of praising the strength of a man by describing him " as strong as a horse," or " an elephant," or " a lion ! " If we compared him to a cockchafer, a bee, or a flea, we should exalt his power much more. Experiments have shown that a flea can jump two hundred times its height, a cockchafer can draw fourteen times its own weight, and a bee twenty times ; or, in other words, a man 6 ft. high, if as strong as a flea, would be able to jump over a building three times the height of St. Paul's Cathedral !

It does not fall to the lot of everyone to extract a tooth from a tiger's mouth, even if the animal, as in this case, was only twelve months old. In the year 1887 we had a very fine tiger cub born in the gardens, but artificial rearing did not, possibly, suit its dentition, for it suffered much from changing its teeth. It began to refuse food, and then fell off in consequence. We determined to help the process of tooth removal, so one morning two keepers managed to get the animal into a strong sack. The sack was securely fastened round its neck, allowing the head to protrude. The " bagged " creature was passed between a keeper's legs, and the end of the bag held by another man. The tiger opened its mouth in a kind of self-defence, and this gave the opportunity for a third man to place a roll of wood between its jaws, and hold the roll from behind. In this way the animal was securely firm, and its mouth well opened, so that access to the teeth was thus made available. With a pair of strong tooth forceps the offending teeth were speedily and effectually removed, and presented to a medical friend who witnessed the proceedings. The gaping mouth looked rather formidable, but the operation was successful, and the patient much better for it.

It has often been remarked, " Why don't you give the animals an anæsthetic when an operation has to be performed ? " The answer is that all these creatures are very intolerant of chloroform and other anæsthetics, and besides there are many difficulties in the way of administration. The following case has been already printed, but it may be as well to repeat it

here, because of a somewhat similar occurrence, where no anæsthetic was given. Some years ago a favourite cockatoo had been placed in the bird-house by its mistress because it was becoming blind from cataract. Mr. Richardson Cross very kindly examined the eye, and an operation was determined upon. I gave the chloroform, and a piece of lint with only half a drachm of chloroform upon it was applied to the head of the bird, quite loosely. It could only have had an infinitesimal dose, when it fluttered its wings and died. Either its heart, which had responded again and again to the caresses of an over-indulgent mistress, would not be cajoled by the wiles of an anæsthetic, or its life-span coincided with the time of the administration, for birds often drop down dead from their perch. Let us corroborate this statement. We had at this time a white-necked buzzard—Buteo Albi-Collis—a very rare bird from Demerara, estimated to be worth £500. Some months after the death of the cockatoo this bird suddenly dropped down from its perch dead.

The felidæ are very prone to inflammation of the lungs. Almost every *post-mortem* upon them gives evidence of this, either as a recent condition, or as having occurred at a more remote period. Some years ago a male cheetah died of inflammation of both lungs—the right the more advanced—and then a few days afterwards a female cheetah died ; and not long afterwards a splendid male tiger succumbed to severe inflammation of the left lung, which had resulted in grey hepatisation.

In the autumn of 1894, I was in Hamburg, and whilst there visited Hagenbeck's famous collection of animals, and amongst them saw one of the rarest creatures the firm had ever come across, viz. a small-sized but full-grown white seal, an albino with distinctly pink eyes.

I also saw a very droll and rare sight, viz. a baby hippopotamus being fed with a bottle like a human infant. It had been brought from Egypt in a specially prepared water-tank. The rearing was quite successful, it grew up to maturity and may be still living.

Some years ago the Clifton Gardens lost quite suddenly

and in a very extraordinary way a Brahmin bull, about five years old, and apparently in splendid condition. He was a great favourite, and had just been granted a new piece of park ground to add to his enjoyment. The season was a very dry one, and the keeper of the deer house was engaged in drawing water from the lake. About 3 p.m. he passed the bull, and saw him playing about in his demesne. In about two minutes he returned from the water and saw the creature lying dead, or nearly so, in his enclosure.

What had occurred ? Nothing but a *post-mortem* could have revealed the cause. Death was caused by fracture of the base of the skull. How did it happen ? We can only theorise, for there was no witness to the tragedy, the evidence was all circumstantial. The animal was very lively, and very fond of what is termed buck-jumping, *i.e.* throwing up his hind quarters whilst supporting himself on his fore legs. In doing this he must have slipped or over-balanced himself, and so have fallen with his head, or rather horns, crashing upon the ground, or more probably on the edge of the brick kerbing of his enclosure, for on careful examination we found the edge of the brick-work broken just where the roots of his horns in this position would impinge. In animals of this kind, and in bulls very especially, the occipital bone is very much developed, very thick and massive to give firm attachment to the neck muscles. In his case the bone was little thicker than an ordinary dinner plate, and the bone was fractured in several places.

During this last summer I paid a visit with some friends to Chillingham, the Earl of Tankerville's seat in Northumberland, and where the celebrated herd of wild white cattle are to be seen.

The day was calm and serene, and the hay harvest in full swing. In company with the head keeper, a very intelligent man named Elliot, we were conducted to the part of the park where the wild cattle happened to be. We had a most fortunate opportunity, for we got to within thirty yards of those nearest to us, and stood for quite half an hour. The unfortuntate thing was we had no camera with us, for it was a

rare occasion for taking an excellent photo. Many of the cows lay chewing the cud, and some of the younger bulls were quietly sporting about, but were every now and then checked in their harmless festivities by the king bull. There is always a master or king bull, who holds his supremacy for a time, until he is dispossessed by a stronger animal, or is shot to give place to a more worthy successor. The herd at this time consisted of ninety-three members, and the ambition of the keeper was to get it up to a hundred.

These cattle are said to be the descendants of the original wild cattle of this country. They are kept quite distinct, and are never crossed with other cattle, or sold alive for interbreeding.

The peculiarities are these: they are fair-sized, white in colour except a black tuft to the tail, and have chestnut-tinted hairs about their ears. They have black muzzles, and the bulls have black tips to their horns, which, except this, are white. The cows have white horns, pointing forwards at first, then curving inwards and gradually more backwards as they advance in years. The bulls rarely come to perfection until they are four or five years old, and the cows rarely calve under four years. The bulls, if not destroyed and this mostly by shooting, live to a very great age for cattle. Thus a bull has been known to attain fifty-two years, and cows between thirty and forty years.

This longevity and slow arriving at pro-creation are very different to our more domestic cattle, and corresponds very much with our felidæ in the Zoo. The lionesses and tigresses rarely have cubs before they are four or five years old, and the males care little for pro-creation until attaining the same ages. Wild stags and deer, I understand from inquiries amongst experts and authorities on the subject, follow very much the same rule. Thus Mr. Archibald Hamilton says (*The Red Deer of Exmoor*): "It is a point much disputed whether a hind has her first calf at three or four years old . . . but when once she begins to breed she rarely misses a year until she attains a great age . . . and young male deer keep company with the hinds until they are about three years old, when they join the stags."

A friend who has had a large experience of stag-hunting, and more especially so in Scotland, thoroughly corroborates the above views, and also suggests that young stags would stand very little chance against the older ones until they had well-developed horns. Doubtless there is much to be said for this argument, but it does not convey the whole facts for lions and tigers in confinement, for there they are protected from any masculine competition. How different are our domestic cats—a kitten will often be a mother before she is a full-grown cat!

On Jan. 7th, 1913, or as near as can be ascertained, a Russian bear, "Judy," had two cubs born. Note the uncertainty of exact date. The reason of it is this. On Dec. 11th "Judy" went into retirement, or semi-hibernation, in a den which had been specially prepared for her, in the expectancy of her shortly afterwards becoming a mother. Cold country bears, as a rule, hibernate during the wintry months. They hide themselves away in caves, holes of trees, or make them a snug berth with boughs and leaves, or even a cavern in the snow itself. There they pass the cold days, feeding on their possession of fat. Now an expectant lady-bear cannot live altogether such an indolent life. The females always have their cubs in the winter, and therefore have to look after their progency as well as themselves, and *all* have to be sustained. The sustenance of all is the burden of fat which the expectant mother has been accumulating during the warmer weather. Well, "Judy" had her cubs, and then after a few days there were unmistakable sounds of infantine life, two cubs certainly, if not three were cradled. On March 27th she and her cubs were seen for the first time, but she had partaken of some food (which had been placed handy for her, and fairly continuously so) on the night of Feb. 24th, and she had also taken a little water apparently. It was a very important thing not to disturb her at all, for by interfering with their habits mothers have been known to destroy their cubs. After Feb. 24th she took food and water occasionally, but never voraciously; but even this small supply of nutriment had the good effect of preventing her from being very nearly reduced to a skeleton, covered with skin and

hair, a condition which is stated to be the case when all around them is natural. Well, she showed herself then in fair condition, but the cubs were splendid, fat, well-formed, and decidedly jolly. No "teddy-bears" dressed up to delight the child-world have ever approached them. Their coats were absolutely clean and sleek, of a dark dove colour, whilst around their neck and shoulders was a white tippet, and along the back a dark brown stripe. "Judy" displayed the greatest care and anxiety in their behalf, and for weeks afterwards could not bear to have them out of her sight.

Even after she had brought them out for public gaze, for many days she still preferred their original den, although another one had been fitted up for a nursery; but when the opportunity did come to allow inspection, her maternal bed of peat moss was scrupulously dry and clean, but a short distance away was a place which had evidently served as a cloaca.

These facts are certain, viz. that for seventy-five days the mother had no food nor drink whatever, and she supported herself and her cubs on her own store of fat. The cubs have thrived well, and are most interesting and attractive, and "Judy" has long and well recovered from her protracted seclusion. None of our fasting heroes and heroines can hold a candle to "Judy"!

SPLENECTOMY FOR SPLENOMEGALY.

BY

J. A. NIXON, M.B. Cantab., F.R.C.P.,

Physician to the Bristol Royal Infirmary.

THERE are many conditions in which enlargement of the spleen occurs. Often, too, the spleen enlarges before any other morbid changes have declared themselves. If then a case presents itself with no other sign than splenomegaly, it is impossible to forecast the ultimate developments which may overtake such

a case. In the endeavour to classify a doubtful case and determine the type to which it most nearly conforms valuable time may be lost. Experience shows that simple splenomegaly is only too frequently the first stage of some serious or fatal malady. According to Osler [1] the ultimate outlook of simple splenomegaly is bad, and there is only one radical cure—removal of the spleen. The results of splenectomy are so favourable, and the fate of splenomegalics with unremoved spleens so unsure, that it seems nowadays unjustifiable to temporise and waste valuable time in administering drugs or "trying X-rays" in the hope that the disease may be arrested.

Apart from leukæmia, there is an increasing volume of evidence that the proper treatment for splenomegaly of doubtful origin and type is splenectomy. Stein, [2] discussing Banti's disease and allied conditions, says, "The various attempts to overthrow or to dissociate the pathological and clinical complex constructed by Banti have so far been unsuccessful, and the brilliant results obtained by surgical intervention will always stand." Similarly Goebel [3] and Bondi advise that early extirpation of the spleen should always be performed in Banti's disease. Burghard [5] considers that there is good prospect of cure, and that the risks of operation are slight if the spleen is removed in the early stages of Banti's disease before the onset of the terminal hepatic cirrhosis and ascites. William Mayo [6] has recently described the results of operation on eighteen cases of splenic anæmia (including Banti's disease): the results were gratifying. "if the disease is uncomplicated, splenectomy may be expected to cure the patient." He advocates this operation in other splenic enlargements of toxic or microbic origin, and states that in primary tuberculosis of the spleen early splenectomy may effect a cure, quoting in support of this statement Franke's ten cases operated upon with seven cures. Malarial spleens may, according to Mayo, be extirpated with advantage, as well as movable and wandering spleens: "rotation of the spleen leads to death or splenectomy." Lott [7] published in 1912 an account of recovery following splenectomy for this accident. In the primary splenomegaly of Gaucher (endothelioma of the

spleen) early splenectomy is followed by recovery.[8] Descarpentries[9] has successfully operated in a case of "icterus splenomegalique." Stengel[10] strongly advocates operation in cases of splenomegaly with hæmolytic jaundice. In fact, the only conditions in which splenectomy for splenomegaly seems inadvisable are (*a*) leukæmia, where the operation is invariably fatal; (*b*) alcoholic or syphilitic cirrhosis of the liver with splenomegaly; (*c*) in splenomegaly associated with primary pylethrombosis.

The accompanying table gives the results of 708 cases of splenectomy up to the year 1908, summarised by Johnston.[11]

Lesion or Disease.	Cases.	Recovered.	Died.
Idiopathic hypertrophy	74	53	21
Idiopathic hypertrophy, ectopic spleen	64	50	6
Idiopathic hypertrophy, twisted pedicle	27	19	8
Malarial hypertrophy	149	111	38
Malarial hypertrophy, ectopic spleen	40	39	1
Malarial hypertrophy, twisted pedicle	12	10	2
Splenic anæmia	61	49	12
Cysts, hydatid	23	19	4
Cysts, non-parasitic	19	19	0
Leukæmia	49	6	43
Tuberculosis	10	8	2
Sarcoma	12	9	3
Abscess	9	8	1
Miscellaneous	13	11	2
Wounds and injuries	150	99	51
Total	708	514	194
Per cent.		72.6	27.4

The following case illustrates the insignificant disturbances which may attend excision of the spleen for simple splenomegaly.

Alice R., aged 14, a factory girl, came under my care in the Bristol Royal Infirmary in July, 1912, complaining of pain across the upper part of the abdomen, of an intermittent character, chiefly localised to the left side, extending into the groin and down the left leg. Occasionally the pain was of a distinctly colicky type. Until a year previously the girl had always been strong and healthy, but she then suddenly "became anæmic," and was obliged to leave school. A typical attack was described as follows:—"Three weeks or a month ago she woke up in the morning with severe stabbing pain across the

top of the stomach and down the left side into the left leg. The pain was very severe and lasted all the morning. The next morning the same thing happened, and it recurred every other day up to the time of admission. Violent exercise or jolting in a tramcar would bring on the pain. Sometimes she felt sick with pain, but had never actually vomited. There had been no appearance of blood in the urine, nor any trouble with micturition." The patient was a well-grown girl, pale, anæmic and sallow-complexioned, with numerous flecks of pigment or large freckles about the skin. No stigmata of congenital syphilis.

Abdomen.—No visible abnormality. On palpation a considerable area of resistance was felt in the left hypochondrium, caused by a smooth, somewhat convex swelling which moved on respiration, extended beneath the ribs above and had a well-defined margin inferiorly; no definite edge could be felt and no notch made out.

The tumour was dull on percussion, and the dulness extended into the spleen area. No band of colon resonance could be found passing over the front of the tumour. The maximum size of the swelling was about four fingers' breadth below the ribs.

Cutaneous hyperæsthesia.—The skin was exceedingly sensitive to a light touch or firm pressure over the whole left side of the abdomen and the whole of the left leg, where a pinch, which was scarcely felt on the right leg, caused exquisite pain. There was also on the abdomen a well-defined zone of tactile hyperæsthesia and hyperalgesia, corresponding with the distribution of the tenth dorsal nerve from the spinal processes to the mid-line in front, with the usual spots of tenderness to deep pressure.

Vertebral column.—There was some apparent rigidity of the spine in the lower dorsal region, with prominence of the spinous processes. But no particular spine was unduly prominent or deviated. Percussion of the spine and jarring of the heels caused pain to be felt radiating round the left side of the body down towards the groin. On bending backwards or forwards there was always an inclination of the body towards the right side.

Examination of the abdomen and spine caused considerable pain, which lasted for two or three hours afterwards.

All reflexes were normal, and no other abnormality of the nervous system was discovered.

Heart and lungs.—Healthy in all respects.

Lymphatic glands.—No enlarged glands.

Urine.—No abnormal appearance or quantity, sp. gr. varied between 1010–1022. Once or twice a faint trace of albumen was present, but nothing else abnormal. No deposit. No casts.

Temperature.—Never raised above normal.

Catamenia.—Not yet commenced.

Skiagrams.—Showed a uniform dense shadow in the left hypochondriac region, suggestive of an enlarged spleen. No spinal caries or renal calculus shown.

Blood examination.—Hæmoglobin, 50 per cent.; red corpuscles, 5,000,000; white corpuscles, 12,600. Differential leucocyte count: polymorphonuclears, 55 per cent.; large mononuclears, 14 per cent.; small mononuclears, 26 per cent.; eosinophiles, 5 per cent. No abnormal cells seen.

Family history.—No member of the family had suffered from any similar condition, and the history was unimportant.

Operation.—The patient was so far incapacitated by her pain that an exploratory laparotomy was performed by Mr. Bush on July 31st, 1912.

The tumour was found to be an enlarged spleen. There was no evidence of renal enlargement, spinal disease, or psoas abscess. The spleen was excised. The gastro-splenic omentum was so short that its division and tying off caused great difficulty, and it was only by exercising great care and ligaturing the omentum in three sections that the inclusion of part of the stomach wall in the pedicle was avoided.

The spleen on removal measured 7 inches in its long axis and 3 inches in its shorter. It looked massive and about three times the average size for the age of the patient. Otherwise its appearance was normal.

The opinion was expressed that the symptoms could not have been caused by the splenic enlargement.

Pathological report.—Professor Walker Hall reported that the enlargement was due to simple hyperplasia of normal spleen tissue.

The patient made an uneventful recovery, except for considerable pain, tympanites and a pulse-rate of 140 the night after the operation.

The hyperæsthesia and girdle pain had completely disappeared by the next day. The whole of the symptoms were relieved, and the patient has remained quite well up to the present time (Aug., 1913). There has been no enlargement of lymphatic glands and no pain in the long bones.

Blood examination.—Repeated blood counts have been performed upon the patient. The only changes which appear to have resulted from the splenectomy were a temporary increase in eosinophiles, and the appearance for a few days only of a large number of cells of a transitional type. These contained horseshoe or multipartite nuclei, but the protoplasm showed no granular staining. They resembled large mononuclear cells with multipartite nuclei.

There was also an increase of lymphocytes at the expense of the polymorphonuclears.

	Hæmoglobin.	Reds.	Whites.	Differential leucocyte count. Polynuclear.	Monon. Small.	uclear. Large.	Eosinophile.	Transitional.	
	%			%	%	%	%	%	
23rd July, 1912 ..	50	5,000,000	12,600	55	26	14	5	—	
31st ,, ,, ..				Operation.					
3rd August ,, ..	70	3,800,000	8,700	65	27	7	1	—	
4th ,, ,, ..	—	—	—	74	18	6	2	—	
5th ,, ,, ..	—	—	—	63	15	17	5	—	
7th ,, ,, ..	—	—	—	56	22	14	8	—	
8th ,, ,, ..	80	5,000,000	10,200	57	25	10	6	2	
9th ,, ,, ..	—	—	—	29	48	10	8	5	
10th ,, ,, ..	—	—	—	36	47	11	5	1	
16th ,, ,, ..	80	4,500,000	9,600	34	50	10	5	1	
25th ,, ,, ..	75	4,000,000	11,600	41	40	10	6	3	2 Basophiles.
16th Oct., ,, ..	80	4,800,000	10,000	41	36	17	6	Some transitionals.	
2nd Dec., 1913 ..	80	4,200,000	9,000	52	37	7	3	—	

This case serves as yet another illustration of the impunity with which the spleen may be removed. The blood changes were of the usual kind and transitory. The low colour index was at once raised after operation and remained permanently raised. There was a relative increase in lymphocytes, and a temporary appearance of a transitional type of leucocyte. There was an eosinophilia before the operation which was scarcely affected. No cause could be assigned to this eosinophilia. It will be interesting to watch the subsequent progress of the patient, and observe whether any of the later phenomena which sometimes attend splenomegaly befall her in her spleenless state.

Later Note.

Dec. 2nd, 1913.– The girl has attended the Tuberculosis Dispensary for the past two months, with suspicious signs at both apices and a recurrence of the pain in the back accompanied by a girdle-hyperæsthesia. Her temperature is persistently raised, and I am again suspicious of spinal caries.

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4 Bondi, *Wien. Klin. Wchnschr.*, 1912, xxv. 327.
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7 Lott, *Am. J. Obst.*, 1912, lxvi. 985.
8 Downes, *Med. Rec.*, 1913, lxxxii. 697 ; *Am. Surg.*, 1913, lvii. 935.
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SPLENECTOMY IN BANTI'S DISEASE.

BY

E. Hey Groves, M.S. Lond., F.R.C.S.,

Surgeon to the Bristol General Hospital.

It is now very widely accepted that removal of the spleen is called for in the majority of cases of splenomegaly, except those associated with leukæmia.

The spleen is probably more than a merely passive blood filter, and its hypertrophy denotes some metabolic error, even as does the enlargement of the thyroid gland.

In Banti's disease there is an anæmia, followed or accompanied by splenic enlargement, and then at a later date occurs cirrhosis of the liver, ascites, jaundice and death. Now whether the *causa causans* of this disease is in the spleen or in the blood, there is sufficient reason to believe that the spleen is the essential factor in its development, and therefore it ought to be removed as soon as the nature of the disease is recognised.

There can be no doubt that the splenectomy ought to take place before any profound change has occurred in the liver, because nothing can restore hepatic function after a certain stage of cirrhosis has occurred. But that even in this stage, removal of the spleen may sometimes be undertaken with benefit, is shown by the following case.

X. Y., a married lady, without family aged 40 years, was born in India, and is said to have had a large spleen since early infancy. More than a year prior to the date of operation, she began to suffer with abdominal discomfort, attacks of bilious vomiting, and general malaise. She consulted Sir Patrick Manson, who detected some enlargement of the liver as well as that of the spleen, but did not suggest any active treatment. For some months the abdomen has been rapidly enlarging.

Condition prior of operation.—There was very great abdominal distension, which was obviously caused by free fluid. The spleen descended to the umbilicus. The liver was not felt. There was some œdema of the feet. Other organs and the urine were normal.

The blood was practically normal, red cells 6,000,000, white 16,000, with 71 per cent. polymorphs, hæmoglobin rather over normal.

Operation, August 20th, 1913.—Abdomen opened by a medium incision above the umbilicus, allowing the escape of many pints of a straw-coloured fluid. The liver was grossly deformed, being shrunken and contracted into two round irregular masses, representing the right and left lobes, neither of which came forward as far as the costal margin.

The incision was enlarged by a transverse cut through the left rectus, in a line between the navel and ensiform cartilage. The spleen was removed (weighing 3½ lb.) after ligature and division of its very vascular pedicle. The main artery and vein

seemed to be about the thickness of one's little finger. The operation was completed by fixing the omentum into the deep layers of the abdominal wound, so as to relieve the hepatic circulation.

The after history for two months was not very encouraging, for although the patient all the time expressed herself as feeling much better, and especially in respect to the absence of the bilious vomiting, yet the accumulation of ascitic fluid was extraordinarily rapid. Every six or seven days she had to be tapped, and often as much as ten pints of fluid withdrawn. Directly the abdomen became tense the legs showed marked œdema. Towards the end of the second month, however, the ascites became less rapid in its development, and at the present time I am informed by her medical man that she only requires tapping every three weeks, and that this only produces a few pints of fluid. She is now resuming an active life, and is in every way unquestionably the better for the operation.

In considering the condition which exists in such a case as this, there is ample reason to expect the removal of the spleen to be a relief in even advanced cirrhosis. In the normal anatomical condition, the splenic vein forms about one-third of the total portal tributaries, and in such a case as the above it probably would convey more blood to the portal vein than all the other feeders of this vessel put together. Therefore the mere removal of the spleen takes away half the blood going into the narrowed hepatic circulation, and allows the blood from the digestive tract to monopolise the liver functions.

Of course, the ultimate relief or cure of the ascites in such a case can only come about by means of the anastomotic circulation afforded by the omentopexy.

PERICOLITIS.

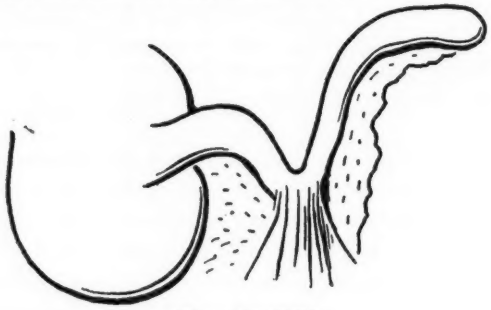
BY

T. CARWARDINE, M.S., F.R.C.S.,

Honorary Surgeon to the Bristol Royal Infirmary.

OBSERVATIONS on the living indicate that in persistent and local fæcal stasis there is inflammation of the covering of the colon, associated with exudate. With marked fæcal impaction

a localised peritonitis may result, and peritoneal adhesions may persist after the passage of the obstruction. In cases where there is ulceration a corresponding inflammation may ensue in the mesentery or cellular interval. This is exemplified in the meso-appendix, which is often thickened and contracted opposite the site of constriction of the appendix (meso-appendicitis), and in meso-sigmoiditis following ulceration of the sigmoid flexure.



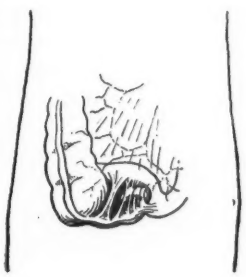
Mesoappendicitis.

Whilst it would appear that inflammation takes the chief share in the formation of pericolic adhesions, it is probable that some of the bands are acquired in reaction to stress and strain, and that some are of congenital origin. It must be borne in mind that the original inflammatory process may subside and the remote consequences persist, and this occurs not uncommonly from appendicitis. If in such a case the appendix be removed without dealing with the remote mechanical results the operation may not give complete relief. Hence it has become desirable to make the incisions and examinations sufficiently extensive to deal with the remote as well as the local trouble. Thus, in operations for supposed chronic appendicitis, it is essential to examine the lower six inches of the ileum, and the ascending colon as far as the hepatic flexure.

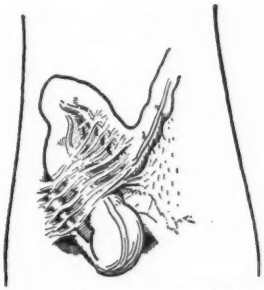
Perhaps it will be as well to consider the subject under several headings :—

Pericolitis from Appendicitis.—This may be represented by a few simple adhesions of little importance, or by bands which

mechanically interfere with peristalsis or even cause obstruction. Although the inflammatory peritoneal attack may clear up, the persistence of wide-spread adhesions indicates its original extent. The commonest condition is when the appendix is bound down, and sometimes angulated as well as fixed; and



Appendicular adhesions.



Pericolitis from appendicitis.

when the fixation is retro-cæcal the mechanical impediment to the cæcum is great, tethering it down, and giving rise to painful peristalsis and sometimes ballooning. Moreover, if it be true that waves of peristalsis begin at the tip of the appendix and a short distance from the end of the ileum—and synchronously reach the cæcum—it is obvious that adhesions interfere with the normal cycle. The position of the pericolic bands depends

Ileal loop from adhesions to cæcum.

Pericolitis persisting after appendicectomy.

in part on that of the appendix, whether free, pelvic, retro-cæcal or paracolic. When the appendix projects downwards and inwards the pelvic organs in the female may become involved, or inflammatory bands may bind the lower ileum down to the pelvis, which is the only variety of kink of the ileum which I have met with at present. Rarely the ileum, some distance from its termination, may become adherent to the cæcum, forming a distinct and fixed loop. When the appendix is paracolic the bands are mostly to the outer side of the colon, where the omentum may also be attached; and the convolutions of the colon may be bound together. In one case recently operated upon I found distinct cysts which had developed in the iliac fossa amongst the adhesions.

Jackson's Membrane.—The importance of this has only recently been recognised, and there are all grades of transition, from mere adhesions to the well-developed condition. Typically speaking, Jackson's membrane consists of a thin film covering the ascending colon as by a thin veil, slightly vascularised, freely movable over the surface of the subjacent bowel, and capable of being cut with the scissors, thus exposing the colon beneath. It is continuous with the right border of the omentum

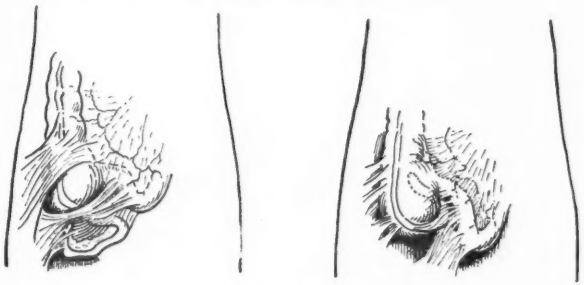
Pericolic films.

Jackson's membrane.

and sometimes with the anterior layer of a transverse mesocolon, in which case the colon is often re-duplicated upon itself, "double-barrelled." The importance of this membrane becomes the greater because its central fibres may be thickened,

so compressing the ascending colon and causing dilatation of the cæcum, or its upper fibres may form a strong band obstructing the bowel at the hepatic flexure.

Lane's Kink.—Of the importance of this there can be no doubt in certain cases, although its origin is explained in various ways. In one case I found that its release completely cured a patient of very chronic intestinal obstruction for which she had been admitted several times. The kink is near the lower part of the ileum, produced by a flat band attached to the lower border of the bowel above and the wall of the pelvis below. The



Pericolitis and Ileal kink.

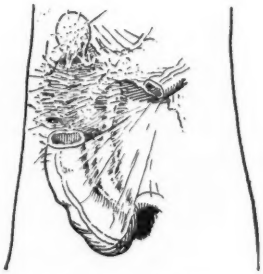
cases which I have seen have suggested an inflammatory rather than a mechanical origin, and the kink of the ileum has been in a downward direction. I have never seen the ileum drawn upwards, even allowing for the displacement of the cæcum at the time of the operation. There is, moreover, some evidence in favour of its congenital origin. Anyway, it is frequently met with associated with pericolitis.

Megaduodenum.—The explanation of this condition was for some time obscure, but is possibly forthcoming in the presence of some sort of obstruction to the bowel lower down ; not only those impediments previously indicated, but more particularly from a duodeno-jejunal kink—a band constricting the bowel at that junction or at the position of the superior mesenteric artery. The influence of the stasis induced by kinks in the lower bowel in the production of *duodenal and gastric ulcers* has

yet to be fully determined by more extended search for them when those ulcers are present.

Appendix Dyspepsia.—It is possible that this term has become necessary from giving too great a prominence to the dyspeptic symptoms of appendicitis, and assigning them to the wrong organ. In the absence of adhesions, or a very unusual position of the appendix, the term may be a very uncertain one. My impression is that when the appendix is tethered there may be cæcal distress; when the tip of the omentum is adherent, then dyspeptic symptoms are the more marked. When the appendix has a very abnormal position the symptoms may be

Paracolic appendix causing gastric symptoms.



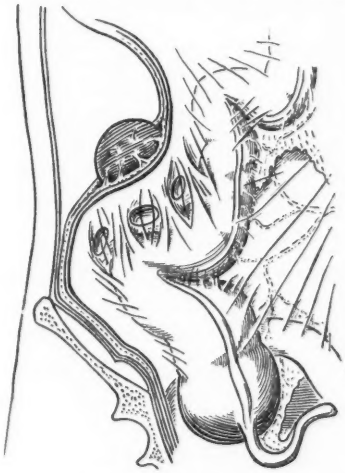
Paracolic appendix causing biliary symptoms.

modified: thus I have known the symptoms of gastric ulcer closely simulated by a paracolic appendix which passed up into the transverse meso-colon, with adhesions to the gall-bladder; and a mimicry of attacks of biliary colic caused by a retro-peritoneal appendix, the tip of which was close to the common duct.

Meso-Sigmoiditis and Sigmoid Pericolitis.—As the sigmoid flexure is a natural reservoir, the stasis in which is influenced by habits and by anatomical variation, its walls are subject to pressure, infection, and sometimes diverticula; and the meso-sigmoid to chronic inflammation. As a result of diverticula peri-sigmoid abscesses may form, and cancer may have its origin therein. When the meso-sigmoid is involved it undergoes

scarring and contracture, becomes adherent to the parietal peritoneum (Toldt's line), and frequently causes the left Fallopian tube or ovary to be drawn up into the scar tissue. This condition will probably receive more attention in the future, as it is the cause of definite symptoms at times, and it may be associated with the similar inflammatory trouble in the right iliac fossa.

Wandering Kidney and Pericolitis.—In a recent article I have shown that extreme mobility of the kidney may be a cause of pericolitis, with cystic spaces between the pericolic bands.



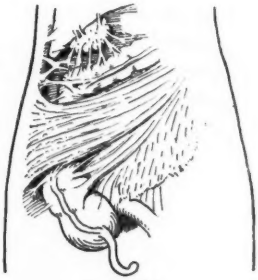
Cystic pericolitis from wandering kidney.

When the kidney drops it causes a descent of the fascial plane in which it lies and to which it is always adherent in such cases, and also a falling of the colon and peritoneum. Pericolitis as a result of nephroptosis requires more attention given to it, the more so since it has been demonstrated that lymphatics pass from the colon to the pelvis of the kidney.

Wandering Kidney and Chronic Appendicitis.—Tenderness at the normal site of the appendix is frequently elicited in cases of wandering kidney and is usually diagnosed as appendicitis.

The removal of the appendix in these cases will not always cure the patient, nor will the fixation of the kidney alone do so. Consequently it has been my practice for some time to remove the appendix and fix the kidney at one operation, with an improvement in the results. Moreover, I am disposed to note

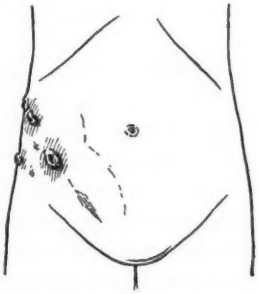
Wandering kidney h appendicular symptoms.



Pericolitis from cholecystitis.

and treat any pericolitis present at the time. Why a loose kidney should cause symptoms of chronic appendicitis is not quite clear, although venous congestion from pressure and traction may play a part. In obscure cases the only diagnostic aid in differentiation which I have been able to obtain is the following: When appendicular tenderness is caused by a loose kidney, that tenderness disappears or greatly diminishes when the kidney is temporarily replaced.

Tuberculous pericolitis.



Actinomycotic pericolitis.

Pericolitis from other Conditions.—Pericolitis at the hepatic flexure is an almost constant association of gall-stones with cholecystitis, although the intestinal stasis may only be present during the acute attack, the subsequent adhesions impede the colon less here than elsewhere. It is also a natural outcome of ileo-cæcal tuberculosis, actinomycosis, and inflammation of Meckel's diverticulum.

The recognition of the baneful influences of pericolitis has been one of the latest additions to the knowledge of the art of healing.

AN APPARATUS FOR THE INTRATRACHEAL ADMINISTRATION OF ETHER.

BY

F. E. SHIPWAY, M.A., M.D. Cantab.,

Anæsthetist to Guy's Hospital.

THIS is a modification of the apparatus which is pictured in the *British Journal of Surgery*, July, 1913, p. 105. It has been altered in many ways with the view to cut down weight and cost and to ensure simplicity. It consists of two parts: (A) the motor and blower; (B) the ether apparatus.

A.—The air current is supplied by an electric motor of $\frac{1}{8}$ h.p., driving a rotary blower, and is made to pass from the blower through an air filter, and then through a two-necked Wolff's bottle half-filled with water. The air filter serves the double purpose of picking up dust, etc., and of removing oil and grease. It consists of a rounded metal chamber, 5 inches high, $1\frac{1}{2}$ inches in diameter, with an entry tube at the bottom for connecting up to the blower, and an exit tube at the top issuing from a screw-on lid. Inside are three metal perforated discs fixed at equal distances upon a central rod, the lower end of which rests upon the bottom of the chamber; the upper end projects above the topmost disc and forms a handle for removal. Several layers of gauze are placed upon the discs, which fit accurately the

interior of the chamber, so that all the air passes through them. This part of the apparatus is efficient, but it is my hope to combine it and the wash-bottle in some simple arrangement.

A resistance and speed-regulator controls the velocity of the air-current. A motor for a continuous current of 105 volts, driven from the main has been selected, since by placing a lamp in the circuit any continuous current up to 250 volts can be used. If the electric current breaks down, or is not suitable, or not available, a foot-bellows in conjunction with the wash-bottle must be used.

B.—The ether apparatus consists of an ether chamber, a warming chamber, and a mercury safety-valve, all connected together by metal tubing of $\frac{3}{8}$-in. bore.

The ether vessel is round and made of metal, with fixed lid, in the centre line of which are placed entry and exit tubes as far apart as possible. It has a diameter of 13 cm. and can take 30 ounces of ether when filled up to a mark on a glass gauge. There are also a funnel for filling and a tap for emptying the chamber. Metal has been chosen in preference to glass, as it is lighter, is not easily damaged, and can be made to any pattern or size. The chamber can be cleaned either by running hot water through it or by boiling after the glass gauge has been removed. The air-current passes over the surface of the ether.

The warming chamber is of the same size as the ether, and is also made of metal, with a loosely-fitting lid and an emptying tap. Inside is a coil of metal tubing. The exit tube is 3 inches in length, and bears a shielded thermometer and a tap for reducing the air-volume several times a minute.

Between these two chambers stands a glass mercury safety-valve, with a short arm projecting from the upper part at right-angles, and carrying a cup to prevent spilling of the mercury when the valve blows off. A manometer is an unnecessary encumbrance, as the safety-valve indicates the respiratory movements, and it is not essential to know the pressure which is being used at any given moment. It is only necessary to know that a certain safe pressure, say 20 mm. or 25 mm. Hg. cannot be exceeded.

A tap for connection with an oxygen cylinder is provided in the circuit before the ether chamber. This can also be used to reduce the air pressure from the blower, as it is my experience that in some cases the blower delivers either too small or too large an air-stream. Another way out of this difficulty is to use the motor at the " just-too-slow " speed, and supplement the current of air by a stream of oxygen. In all cases there is an optimum ventilation. Gas and oxygen can also be administered through this oxygen tap. I am at present working on this method.

The ether chamber is connected to the main tubing by the tap used by Elsberg, which has an entry and an exit tube, and consists of a central cog-wheel bearing a handle and gearing with two lateral cog-wheels. Each of these wheels bears a tap. By turning the handle any desired proportion of the air-current can be made to pass over the ether, or the air can be made altogether to miss the ether. A pointer on the handle shows the proportion of air and ether delivered to the patient, which is warmed up by its passage through the heating chamber.

The delivery tube from the latter is provided with 3 ft. of india-rubber tubing, the distal end being slipped over the catheter. Hot water is placed in the warming chamber, and the motor started before induction of anæsthesia. The tubes then are warmed up by the time the catheter has been passed, and generally speaking the thermometer stands at 120°–125°F. This temperature remains fairly constant for ten minutes, when fresh hot water must be added. An electric heating device may be used, but it has been thought desirable to make the outfit as simple as possible, and not too costly.

The ether apparatus is carried in a box of 3-ply wood, and has been made for me by the Surgical Manufacturing Company, 85 Mortimer Street, W. The electric direct laryngoscope and the linen-woven catheters have been made in accordance with my ideas by Messrs. Mayer & Meltzer, Great Portland Street, W.

A COMBINED MANOMETER AND SAFETY VALVE FOR INTRATRACHEAL ANÆSTHESIA.

BY

STUART V. STOCK, M.B., B.S., F.R.C.S.,

Senior Assistant Anæsthetist, Bristol Royal Infirmary; Anæsthetist, Bristol Eye Hospital,

AND

J. D. FRY, B.Sc.,

Lecturer and Demonstrator in Physics, University of Bristol.

THE method of Meltzer and Aner, adapted for use in the human subject by Elsberg, makes an advance in our methods of inhalation anæsthesia, the value of which in certain operations cannot be over estimated. In this method the anæsthetist is to a large extent dependent on his apparatus. Too much care, therefore, cannot be expended on its design and construction.

The various excellent pieces of apparatus on the market appeared to the writers to fall short in some respect or other of the ideal machine, and with a view to producing an instrument capable of accurate adjustment and dosage, at the same time simple in construction, and as far as possible reliable in its action, they started experimenting in March of this year.

The first piece of the apparatus to be taken in hand was the safety valve. Those familiar with the intratracheal method of administering anæsthetics well know that an efficient safety valve is a *sine qua non*. Two types of valve appear to be in use, In the first of these the pressure is regulated by a spring, while in the second the open end of a glass tube is immersed in mercury. the pressure being regulated by the depth to which the tube is immersed.

The first type was abandoned, both on account of the difficulty of obtaining a suitable accurate adjustment, and of its uncertainty of action due to occasional stiction of the working parts which renders it unreliable.

The second type was more promising. It is invariably certain in its action, and the " blow-off pressure " can be regulated

to a nicety. Experiments were made with a view to constructing a manometer and safety valve combined, by means of which the pressure should be under observation and control, so that the excess pressure beyond a determined point should automatically blow off rapidly and steadily, without any great variation of the internal pressure.

The instrument in its final form consists of a bottle (*A*) holding the mercury. Its neck is fitted with a perforated cork (*N*), and from its side springs a vertical tube (*E*), through which the air escapes. Through the perforated cork (*N*) passes the vertical tube (*B*), to the lower end of which is attached a steel ferrule (to be afterwards described). At its upper end it communicates with the tube (*C*), through which the main stream of air and ether passes on its way to the lungs. Springing from the junction of (*B*) with (*C*) is the manometer tube (*D*) (see Fgs. 1 and 3). The tube (*B*) is a sliding fit in the cork (*N*) of the bottle (*A*). Behind the mercury bottle stands a pillar (*P*), which carries a guide (*H*), in which slides the rod (*G*), actuated by a rack and pinion movement (*K*). The upper end of (*G*) carries two arms (*FF*) (see Fgs. 1 and 2), whose ends embrace the tube (*C*). Thus by a movement of the wheel (*K*) the tube (*B*) can be raised or lowered, and the steel ferrule on its end immersed to a greater or less depth in the mercury. This arrangement allows a very fine adjustment of pressure with the very greatest ease.

A feature of the safety valve is the ferrule (*M*) (Fg. 3). It will be noted that the ferrule (*M*) made of steel, and cemented to the end of (*B*), is perforated by a large number of fine holes. The combined area of these small holes is slightly greater than the cross sectional area of the tube (*B*). The arrangement of these holes is peculiar, they are drilled on a spiral of fine pitch round the ferrule. As the internal pressure rises an increasing number of these fine holes are brought into play. As a result, no great or sudden variation of the pressure takes place.

The safety valve with its manometer is placed between the rest of the apparatus and the patient, so that a practically accurate knowledge is obtained of the pressure at which the

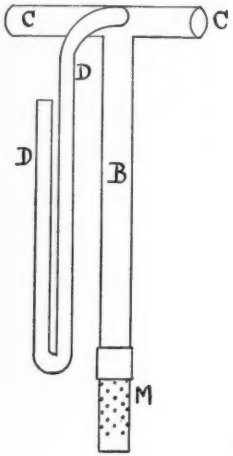


Fig III.

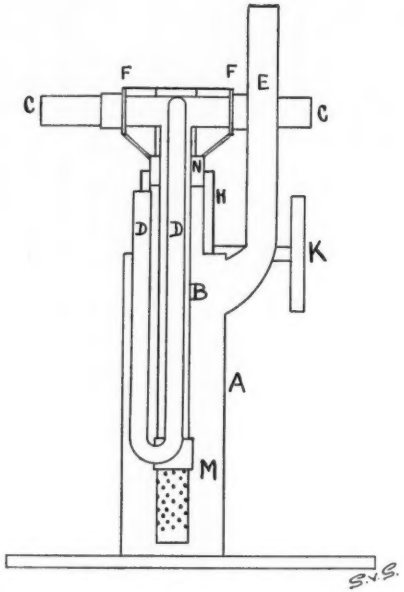


Fig II.

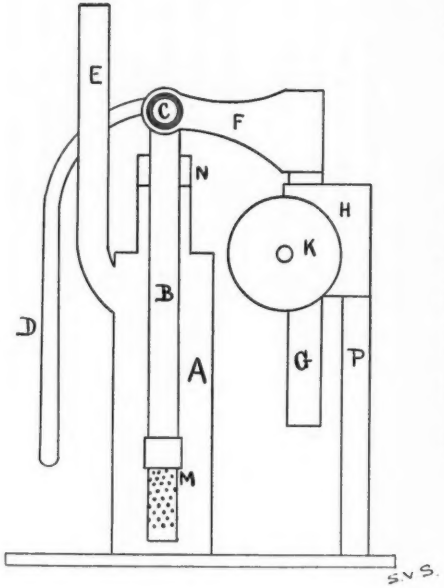


Fig. I

mixture of air and ether enters the lungs. A slight fall in pressure takes place between the safety valve and the eye of the tracheal catheter, owing to the frictional resistance of the tubing through which it passes, but this is so small that for practical purposes it can be disregarded. When not in use the open ends of all the tubes are closed with corks, thus rendering it portable. The safety valve has been in use clinically since April last, and has given complete satisfaction. A description of it is published now before the completion of the machine, in the hope that it may prove of use to other workers in the field.

Quantitative experiments have been made on the cooling of the ether air mixture due to the evaporation of ether, for the purpose of devising a more convenient vaporiser. Other experiments are now in progress dealing with the construction of a simple apparatus for accurately determining the percentage of ether in a given air ether mixture.

A SIMPLE APPARATUS FOR INTRATRACHEAL ANÆSTHESIA.

BY

E. W. HEY GROVES, M.S. Lond., F.R.C.S.,

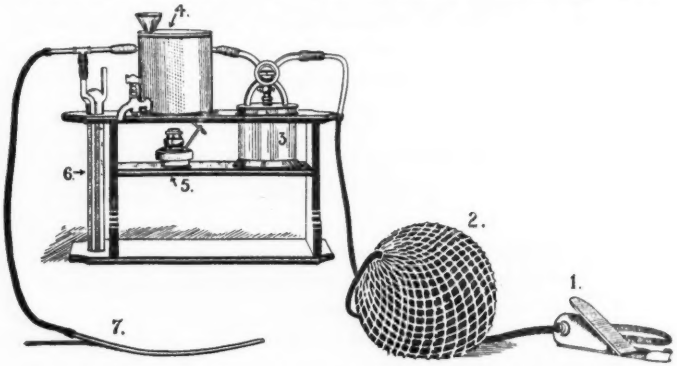
Surgeon to the Bristol General Hospital.

HAVING been for a long time convinced by the inventors of intratracheal anæsthesia of its advantages, and having had the privilege of seeing Dr. Shipway use the method at Guy's Hospital, I determined to acquire a suitable apparatus. I was deterred from buying any apparatus, either American or English, which was upon the market, because of the bulk, complexity, and expense of all of these.

The Fig. shows the apparatus. (1) is a small foot pump filling distensible rubber bag (2) which keeps up a constant air stream. This passes into or over the ether bottle (3) by means of a four-way tap. This tap allows all the air to pass through the ether chamber, or to go on without any mixture with ether, or any intermediate condition of air and ether mixtures. From the ether chamber the air passes in a spiral tube contained

in a hot-water tank (4), which can be kept heated by the spirit lamp (5) underneath. From the heating tank the air passes over a glass pressure gauge (6), which also acts as a safety valve. This is merely a water gauge, in which the glass tube connected with the air stream is covered by seven or eight inches of water. If the air pressure in the apparatus should rise above this, which corresponds to 14 to 16 mm. of mercury, the air escapes by bubbling out at the bottom end of the submerged tube. Lastly, a tube and catheter forming the delivery limb of the apparatus completes the equipment.

About the efficiency of the apparatus I have no doubt, except in the one and important point of the air pump. The one which I have used and figured is too small, and is liable to impose an



undue strain on the anæsthetist during a prolonged operation.

A large foot bellows, with big rubber gas-bag and $\frac{3}{8}$-in. delivery tube, is required for an ample air supply without undue exertion, and, of course, for hospital work, some form of motor blower will always be used.

DISCUSSION.—The three foregoing descriptions of apparatus were demonstrated at the meeting of the Bristol Medico-Chirurgical Society on November 12th.—The PRESIDENT said that it was a great advantage to have seen together the three different pieces of apparatus shown by Mr. Shipway, Mr. Stock and Mr. Groves, and he thanked Mr. Shipway on behalf of the Society for his interesting demonstration,

stating that he had taken the opportunity of seeing Mr. Shipway's method in practice that afternoon at the Bristol General Hospital. That intratracheal anæsthesia was of great value in many cases he knew from his own experience of the method, since Mr. Stock had introduced it at the Royal Infirmary for several operations in his clinic earlier in the year. He had been particularly struck with the quiet breathing and absence of all respiratory embarrassment from blood getting into the trachea, in fact even with a pool of blood in the pharynx there was no need to mop, as far as respiration was concerned. But at the Royal Infirmary they had found no difficulty in introducing the tube into the trachea either by touch or by the direct method of inspection, and he thought that while the direct laryngeal tube was simple and preferable in many patients, in old patients with short thick necks, in whom complete extension of the head was unattainable, the direct laryngeal tube was likely to present some difficulty in practice.—Mr. E. W. HEY GROVES said it was the smooth type of anæsthesia produced by the method which first led him to advocate its application. That afternoon Mr. Shipway had employed the method at the Bristol General Hospital on a patient of the speaker's, who had chronic left empyema and paralysis of the left vocal cord. He thought that it was through the application of the method that the operation had been made possible. The speaker also showed an apparatus he had himself had constructed for the administration of ether in this way. He hoped the method would prove available for cleft palate operations.—Mr. C. A. MORTON expressed the gratitude felt to Mr. Shipway for his demonstration. He did not feel convinced that the method diminished shock to the degree alleged, but in cases of respiratory embarrassment, as in goitre, it was extremely useful.—Mr. STOCK inquired whether preliminary narcotisation by hypodermic injection was recommended by the demonstrator, and if he considered it better to have the eye of the catheter used as a lateral one rather than terminal.—The PRESIDENT asked why the catheter was passed down to the bifurcation of the trachea. He thought the indirect method of inserting the catheter in some cases would be preferable to the direct method. He asked if a nasal catheter would not be best in some cases.—Mr. SHIPWAY, in replying, said it was absolutely necessary to pass the catheter to the bifurcation so as to have the "dead space" above it. He advised a preliminary injection of morphine and atropine, and applied five per cent. cocain solution to the pharynx and upper aperture of the larynx. He preferred the direct method of passing the catheter, and rarely needed to extend the head, passing the laryngoscope from the side of the mouth. He believed tracheitis was guarded against by having a lateral eye to the catheter. In cleft palate he considered the patients were usually too young to have ether.

Progress of the Medical Sciences.

MEDICINE.

The Pancreatic Secretion.—An interesting question has been raised by Schlagintweit and Stepp [1] as to the effect of achylia gastrica on the pancreatic secretion. As is well known, the secretion of pancreatic juice is provoked by a chemical reflex, namely by the formation of secretin, and its conduction to the pancreas by way of the blood stream. But as secretin is evolved from the duodenal mucosa by the action of the acid gastric juice, the authors imagined that possibly where the latter was inactive or absent some deficiency in pancreatic secretion might secondarily occur. They therefore devised two series of experiments to test this view. First, they obtained specimens of gastric juice from normal persons and from those suffering from carcinoma of the stomach and from achylia. These they mixed with extract from the duodenal mucosa, and injected intravenously into dogs. They found that normal and most carcinomatous persons gave a juice which produced secretin, and caused a flow of pancreatic secretion, but that in achylia the results were negative. They then successfully operated on a healthy bitch, in order to produce a duodenal and pancreatic fistula. The animal remained in normal health after the operation. Into the duodenal fistula they injected gastric juice from normal persons, from those with superacidity and subacidity, from those with undoubted carcinoma, and also salt solutions of various strengths. The injections were always made when the animal's stomach was empty, slowly and under low pressure, and due note was taken of any instances when the animal's own gastric juice escaped into the duodenum. As a result of many observations, they found that the injection of anacid gastric juice either from cases of carcinoma or from cases of achylia only produced a minimal pancreatic secretion.

This result is opposed to the commonly accepted view that when gastric digestion is eliminated the pancreas takes on a compensatory over-action. The authors discuss possible criticisms of their findings; it may be urged that in diseased persons the pancreas is activated (*i.e.* secretin is formed) apart from the action of the gastric juice, and that it is impossible to apply the results obtained from dogs to the human subject until a condition analogous to achylia gastrica has been proved to occur in these animals. Still, they are of opinion that considerable importance attaches to their experiments, especially

[1] *München. med. Wchnschr.*, 1913, lx. 1865.

as there are no systematic observations of the trypsin secretion in cases of achylia. Von Noorden has indeed shown that the absorption of food is not disturbed in achylia, but on the other hand cases have been observed where achylia gastrica was accompanied by absence of pancreatic secretion. They are inclined to think that there may be other substances, such as oils, which excite pancreatic secretion by a nervous reflex, and that soaps formed in the intestine may produce duodenal secretin. For these they quote some experimental evidence, and also mention some recent researches which show that a rhythmic and automatic flow of pancreatic juice may occur. They express no opinion as to the question of psychic influence on pancreatic secretion, but conclude that at any rate it is the result of several different causative factors, and when the less important ones are in abeyance the absence of acid gastric juice leads to severe pancreatic insufficiency (pancreatic achylia).

The effect of the absence of bile from the intestine has been studied in a child aged ten weeks, suffering from congenital absence of the bile-ducts, by Koplik and Crohn.[1] The pancreatic duct was normal, and the only deficiency concerned the splitting up and absorption of fats. Nitrogen metabolism was unaffected, and the pancreatic secretion active. Höflich[2] has shown in twelve cases that severe disease of the gall-bladder and cholecystectomy fails to influence the secretion of gastric juice, so that presumably the pancreatic secretion is also unaffected.

Gastric and Duodenal Ulceration.—Many theories have been evolved as to the causation of gastric ulceration, two of the best known being that which attributes the condition to embolic necrosis, and that first put forth as the result of experimental work by Bolton, which supposes that cytotoxins or more or less specific cellular poisons acting in an acid medium are the cause both of the ulcer and its chronicity. The bacterial origin of these ulcers has also, however, been somewhat widely held, and from this point of view Steinharter[3] has carried out some interesting experiments. He prepared broth cultures of bacillus coli, and caused them to clump by the addition of an acid, agglutinating reagent. The culture was centrifugalised, and an emulsion of clumped bacilli obtained and injected into the ear vein of a hare or rabbit. In five animals ulceration or some evidence of destruction of the epithelial cells was found. In one previously immunised animal hemorrhages but no ulceration occurred; and two controls, one of which was not injected, and the other only with an emulsion containing the agglutinating reagent, were normal. The author supposes that

[1] *Am. J. Dis. of Childr.*, 1913, v. 36.

[2] Abstract in *Schmidt's Jahrbuch*, 1913, cccxviii. 242.

[3] *Boston M. & S. J.*, 1913, clxix. 81.

similar processes may occur in the human subject, and proposes further investigations as to the exact mode in which the lesion is produced. Thus it may be embolic or toxic or both; it may be selective or general; other organisms may be able to produce similar effects. No statement is made in the present communication as to the condition of the other organs of the experimental animals, and the author's further investigations will be awaited with interest.

Flesch[1] in an analysis of the post-mortem appearances of eleven cases of duodenal and gastric ulcer in infants under six months of age, lays stress on the importance of two ætiological factors in these cases. Firstly, the absence of antipepsin in marasmic infants, and secondly, the situation above the entrance of the pancreatic and bile-ducts where these ulcers are usually found, and where the mucosa is not protected by alkaline secretions.

The **diagnosis** of gastric and duodenal ulceration by means of the X-rays is the subject of a paper by F. W. White and A. W. George.[2] They point out that in all cases *two* series of plates should be taken, in order to obtain confirmatory evidence of the appearances. With regard to *gastric ulcer*, two important changes may be noted. The first is local or reflex pyloric spasm; the former intermittent, and best seen when the stomach is empty. The reflex pyloric spasm lasts for a very variable time, and causes considerable delay in the evacuation of the stomach contents into the duodenum. Generally, they consider that a considerable residue after six hours, associated with superacidity and capable of no anatomical or other explanation, is suggestive of gastric ulceration, though in half the cases of ulcer the stomach is empty in six hours. The second important change is in the shape of the stomach. This may be due to cicatricial contraction, which produces the well-known hour-glass stomach. The contracting ring is then constant, immobile, and nearer the lower end of the organ. The stomach may be drawn over towards the left. External adhesions may cause great variations in the shape of the stomach according to their position and origin. Those between the stomach and gall-bladder may pull the former over to the right. The causes of the adhesions cannot usually be determined by X-ray examination, though they are usually due to old ulceration or disease of the gall-bladder. The authors also draw attention to the pouch of bismuth sometimes seen in perforating ulcers. The air bubble at the apex of the pouch they have not found at all constant; the lateral view is recommended for discovering perforating ulcers on the posterior surface.

With regard to **duodenal ulcers,** the authors insist on the

[1] *Jahrb. f. Kinderheilk.*, 1912, lxxxi. 542.

[2] *Boston M. & S. J.*, 1913, clxix. 157.

importance of examining the patient from various points of view, lying down, standing up, or lying on the right side. The first part of the duodenum, the " bulbus duodeni " or " cap," which is important from the frequency with which lesions occur in it, should be seen in normal persons in one or other of these positions. Any marked or constant irregularity in its shape is indicative of some lesion, though shallow erosions may be present without influencing the X-ray picture. Both here and in other parts of the duodenum the abnormal shadows are produced by the results of ulceration or adhesions, and not by their simple presence alone. The authors consider stenosis of the duodeno-jejunal angle not very rare, and productive of great dilatation, but not frequently of ulceration. The vexed question of the influence of duodenal lesions on the mobility of the stomach is discussed, and the general conclusion reached that *per se* an ulcer in the duodenum causes the stomach to empty itself rapidly, but that when, as in cases of longer standing, some mechanical obstruction by adhesions or cicatricial contractions is present, this tendency is counteracted in greater or less degree, so that the time of evacuation may be normal or extended.

The Action of Purgatives.—Meyer-Betz and Gebhardt[1] have investigated the action of several purgatives by means of the bismuth meal in practically normal young men. Senna was found to have a very constant action ; the small intestine was uninfluenced, and the cæcum was filled in the normal time, but emptied itself more rapidly. The main effect was on the large intestine, and especially on the transverse colon, well marked and rapid segmentation being observed, which appeared to progress in a regular and orderly way. They did not note any suppression of normal antiperistalsis. Extract of aloes did not give such constant results, but in like manner failed to affect the stomach and small intestine. Small doses produced an appreciable effect on the large intestine ; big doses, while somewhat similar in their effect to senna, also produced deep segmentations, closely resembling in appearance a spastic constipation. The small fæcal masses were eventually collected together in the splenic flexure, and then passed on in small balls to the sigmoid. Thus large doses of aloes are apt to cause delay in the passage of the intestinal contents. Castor oil delayed the evacuation of the stomach, but hastened peristalsis in both small and large intestines, and caused abundant gas formation. The contents were moved forward by large spasmodic movements. Jalap produced no marked effect on the stomach, but caused excessive secretion and fluidity of the intestinal contents both in the small and large intestine. The cæcum was rapidly emptied, and defæcation began as soon as the rectum was filled.

[1] *München. med. Wchnschr.*, 1912, lix. 1793.

Salts when given with a meal did not hasten the emptying of the stomach, but when given later had a marked effect on the further evacuation of the viscus. The action on the small intestine was similar to that of jalap, but in the large intestine the fluid mass, mixed with gas, remained passive for some time, till a sudden explosive movement hurried it rapidly on, often, however, leaving the more solid portions behind. Magnesium sulphate given in equal doses acted more violently than Carlsbad salts. Calomel acted on both small and large intestine, without increasing the intestinal secretions.

A similar investigation, undertaken by Lebon and Aubourg[1] with reference to phenolphthalein, showed that small doses acted in the same way as scammony and jalap, but did not show evidence of increased secretion. Doses of scammony from ½ to 1 gram (7½ to 15 grains), given in a cachet, showed little effect on the small intestine so far as increased peristalsis was concerned, though the fluidity of the intestinal contents was considerably increased with the larger dose.

J. M. FORTESCUE-BRICKDALE.

SURGERY.

Recent Advances in the Treatment of Gonorrhœa.—Considering the prominence which syphilis and its modern treatment has recently assumed, the importance of efficient and early treatment in the other venereal scourge, gonorrhœa, cannot be too often emphasised. With modern methods persistently applied, there are practically no cases in which a cure is not eventually obtained. It is the dalliance with the chemist and the lay advice, too often followed, wherein lie the most fruitful sources of the chronic stages which try, even the expert, to the utmost to subdue, although the pessimistic utterance of Ricord, that "one knows perfectly well when a clap begins, but that it is the privilege of God of being able to tell when it will end" does not quite hold good to-day.

The methods of accurate localisation of the disease are often neglected, and the varieties of treatment are so many, that one is at a loss as to which is the most efficient and at what stage it should be applied, and falls back on the inevitable injection in and out of season, in the often disappointed hope that all signs and symptoms of the disease will disappear before patient and physician are wearied of the sight of one another.

A brief outline of the recent progress made in the treatment of this fell disease should be of value, for it is possible to lay down more or less definite lines of treatment for the majority

[1] *Buil. et Mém. Soc. de Radiol. Méd. de Paris*, No. 31, 1912.

of cases, although exceptions arise in a small minority, where intolerance and idiosyncrasy prevent their application.

Under favourable conditions a gonorrhœa, as is well known, may terminate in six weeks, and presents during that period three more or less definite stages, viz. that of acute purulent and increasing discharge, with its associated severe discomfort; that of diminution in the amount and thickness of the discharge and gradual disappearance of pain and discomfort; and lastly, that of a thin and gradually subsiding discharge, each stage being roughly a fortnight in duration. The question of aborting the disease should be considered, but it is useless to do so forty-eight hours after its appearance, the gonococci having already penetrated the epithelium, in which a safe refuge is found from all antiseptics of a suitable strength.

Should the patient be sensible enough to go to the right source of treatment at once, the best method of averting the disease is that of irrigation of the anterior urethra by Janet's[1] method, night and morning, with large quantities and increasing strengths of potassium permanganate, from 1–5,000 to 1–1,000, over a period of ten days, when eighty-seven per cent. of cures are obtained if the disease is thus attacked twelve hours after its appearance.

The efficacy of the treatment can then be determined by allowing the patient to resume his ordinary life, including alcohol, and should the discharge reappear, another course of irrigation for ten days should be instituted.

It is, unfortunately, seldom that the opportunity for abortion arises, and even then the irrigation treatment can only be carried out in private practice and at special hospitals. Until the day arrives when the community looks upon those attacked with gonorrhœa, as a result of their own indiscretion, as unfortunate fools only, it is unlikely that the proportion amenable to this treatment will increase.

Usually it falls to one's lot to apply antiphlogistic treatment to the acute stage of gonorrhœa, which, as Luys puts it, "is not destined to cure but to relieve."

Its first object is the removal of all factors which tend to act adversely on the course of the disease.

Rest, general and local, is advisable, and in the latter a suspender which holds the penis in a vertical position on the abdomen is of advantage, as it obliterates the peno-scrotal angle and prevents damming back of the discharge.

The relief obtained by the intake of large quantities of fluid, of a bland nature, is well recognised, and the addition of an alkali to the various urinary sedatives is of value in diminishing the scalding. To direct the patient to pass urine with the

[1] Luys, *Gonorrhœa and its Complications*, Translated and Edited by A. Foerster, 1913, p. 278.

penis immersed in a glass of hot water also relieves this conside ably.

Leeches to the perineum in severe cases are of value, and for painful erection bromide of camphor, in 1-gram doses half an hour before bed-time, is said by Luys [1] to be an improvement on the bromide of potassium.

This treatment should be adopted for about a fortnight, until the pain during micturition ceases, and the second stage is reached, when urethro-vesical irrigations of potassium permanganate, 1–5,000, by Janet's method, should be commenced. The risk of infecting the deep urethra, sometimes feared, is *nil*, and this should be carried out even if no sign of posterior urethritis is present.

They should be continued once or twice daily for two weeks, then on alternate days, every fourth day, and finally once a week, and if no discharge is present after an interval of a week, they should be discontinued.

The strength should be increased if the discharge continues with little diminution, and diminished if pain and scalding are aggravated.

During the second stage the administration of sandal-wood oil is advisable, and the patient should be directed to urinate as frequently as possible, so that the drug in the urine is brought into contact with the urethral mucous membrane as often as possible ; but it is only a source of increased irritation if administered in the acute stage.

In the event of posterior urethritis supervening, as indicated by frequency, difficulty of micturition, and, occasionally, by hæmaturia at the end of micturition, hot rectal injections, morphia and urotropine are indicated ; but urethro-vesical irrigations should be discontinued until the acute symptoms subside, and then reinstituted with permanganate or 1–3,000 silver nitrate and the prostate massaged.

The presence of chronic post-urethritis is revealed by the three or five glass method, the examination being carried out on the early morning urine, or three or four hours after the previous micturition.

The onset of posterior urethritis during the course of an infection of the anterior urethra alters the prognosis, and one can say with confidence that the advent of cure will be delayed, even with thorough treatment, for a period of some months, and very frequently a year, and unless the patient persists may remain for an indefinite period. Although Keyes [2] has found that the gonococcus, apart from reinfection, rarely survives for more than three years, it is probable that it may remain dormant for much longer. The urethro-vesical irrigations should be associated with dilatation of the posterior

[1] Luys, *Op. cit.*, p. 275. [2] Keyes, *Tr. Am. Urolog. Ass.*, 1911, v. 37.

urethra by Kollmann or other dilators, and massage of the prostate, vesiculæ seminales, and the glands of the urethra against a metal sound is commenced. The occasional para-meatal crypts on the glands should also be sought for, and if present examined as a likely hiding-place for the organism, and as a cause of the persistence of the disease.

The value of dilating lies in its action of keeping the mouths of infected glandular ducts and crypts well open, so that the subsequent massage and irrigation may have its full effect.

Kollmann's irrigating dilator is one of the most satisfactory, for its action can be completely controlled, hemorrhage never occurring if used with care, and its effect in preventing stricture and curing it in its early stages undoubted.

Its action on the granular patches, which often maintain a chronic anterior urethritis, is most marked, and combined with irrigations of silver nitrate or permanganate of potassium, is the best method of dealing with this condition.

The urethroscope is an essential for localising and treating chronic lesions in the anterior and posterior urethra, to which applications of increasing strengths of silver nitrate, etc., cautery, or knife, as indicated, may be directly applied.

The posterior urethra, prostate and vesiculæ are most often responsible for the chronic gleet and the recrudescence of discharge so often the despair of the patient. It is these structures that need special attention in the treatment of chronic gonorrhœa.

The exact condition of the posterior urethra can only be investigated and treated satisfactorily by the urethroscope, which reveals many and varied pathological conditions, of the verumontanum and its neighbourhood, as the source of chronic gleet.

The necessity for prostatic massage and stripping of the vesiculæ is usually manifest, on rectal examination, by the presence of induration in one or both prostatic lobes, and of vesiculæ that are enlarged, firm and painful.

In most cases this treatment reduces both to their normal condition, though sometimes a certain amount of fibrous induration remains, despite its thorough application. But this is not inconsistent with a cure.

The glands of Cowper in resistant cases should be palpated, and if infected will be felt as firm bodies, the size of a pea, between the index finger in the rectum and the thumb on the skin of the perineum, just to the outer side of the bulb; expression of their contents daily aids in the disappearance of gleet, if its source lies therein.

It is a satisfaction to know that modern methods of examination and recognition of the pathological conditions in the

posterior urethra, followed by suitable and persistent treatment, seldom fail to cure.

There are, nevertheless, certain conditions, such as vesiculitis, which resist the most thorough treatment, and manifest their persistence by chronic or recurrent discharge and gonorrhœal rheumatism.

When the usual gamut of treatment for these conditions has failed, and enlarged and tender vesiculæ still exist, the method suggested by Fuller,[1] in 1901, of incising and draining the vesiculæ seminales, via the perineum, should be considered. If statistics prove anything, this is a great advance in dealing with such resistant cases. He records many chronic cases, since 1901, treated by himself and others with most gratifying results, when all other means failed. He says that "the indications for this treatment are chiefly chronic, relapsing urethral discharge and gonorrhœal rheumatism with enlarged vesiculæ." The effect of the operation in acute, bed-ridden cases of gonorrhœal rheumatism is said to be marked, the joint pains disappearing in 24 to 36 hours, the swelling by the fourth or fifth day, and the chronic pains in a week or ten days; and the objection to massage of the joints, which gives rise to an increase in the pain, no longer exists after drainage of the vesiculæ. He instances fifteen cases of severe acute rheumatism subjected to this treatment, of which thirteen were promptly cured and two radically relieved; three subacute cases, of which two were cured, and one developed later tuberculous disease in these organs; two relapsing cases cured; seven chronic cases of many months' duration, five promptly, one eventually cured, and one relieved; eight chronic cases of years' duration, four cured and two much relieved; one relieved, but the joints not yet well, and one of eighteen years' duration relieved for six months, followed by relapse.

In 1909 Fuller[2] reported 251 cases on which he had operated without mortality and with uniformly good results; moreover, the excellent effect of this proceeding has been confirmed by other surgeons. One not infrequently meets with the condition known as "pus-tubes in the male," namely, a hard nodule at the lower end of the epididymis appearing after an attack of epididymitis and persisting. This condition is one of the sources of recurrent discharge and chronic gleet, and leads to blocking of the vas of the affected side by fibrous tissue.

Belfield,[3] has opened and drained the vas for this condition, The value of gonococcal vaccines in acute urethritis appears to and for treatment of chronic vesiculitis by irrigation; and the method seems to hold out some promise of more rapid cure.

[1] Fuller, *J. Am. M. Ass.*, 1901, xxxvi. 1228.

[2] Fuller, *Med. Rec.*, 1909, lxxvi. 717.

[3] Belfield, *Tr. Am. Urolog. Ass.*, 1909, iii. 13.

be small, and in chronic cases the results are not particularly encouraging. Not infrequently one is asked when a patient is fit to marry after gonorrhœa. This has, in the past, been a most difficult question to answer.

One knows the difficulty, often experienced, in finding the gonococcus in chronic cases, how that plate culture after plate culture may be made, and no gonococcus found, the patient being eventually told he is fit to marry, and the fallacy of one's advice proven by the development of a gonorrhœal discharge in the wife, or even peritonitis. It is to be hoped that a means has now been found, to prevent the giving of such calamitous advice, in the complement fixation test for gonorrhœa, first applied by Müller and Oppenheim in 1906,[1] to the study of the serum of a patient with gonorrhœal arthritis. Torrey[2] in 1907 confirmed the fact that all anti-gonococcal sera have power to bind complement, and that a particular strain of gonococcus only reacts strongly to serum from an animal immunised with that strain, proving the existence of different strains of this organism.

Schwartz,[3] with this in view, tested 324 human sera from patients with acute or chronic gonorrhœa, and proved the necessity for a polyvalent antigen. In this test he used an antigen prepared from a dozen different strains of gonococcus, and followed the technique of the Wassermann reaction in his experiments with the complement fixation test for gonorrhœa. He found that a positive reaction denotes the presence of or the recent activity of a focus of living gonococci in the body.

Schmidt,[4] Swinburne,[5] Gardner and Clowes,[6] and other workers have tested its value on human sera in many hundreds of cases, and found that no normal individual gives the reaction, and that diseases such as syphilis and tubercle, with definite deviation phenomena, do not react to this test, which therefore has a high degree of specificity. No reaction is obtained for three weeks, coinciding with the period during which the disease is confined to the anterior urethra, and the absorption of toxins

[1] Müller and Oppenheim, *Wien. Klin. Wchnschr.*, 1906, xix. 894.

[2] Torrey, "Agglutinins and Precipitins in Anti-Gonococcic Serum," *J. Med. Research*, 1907–8, xvi. 329.

[3] Schwartz, "The Complement Fixation Test in the Diagnosis of Gonorrhœa," *Am. J. M. Sc.*, 1911, cxli. 693.

[4] Schmidt, "The Complement Fixation Test for Gonorrhœa," *Tr. Am. Urolog. Ass.*, 1911, v. 30.

[4] Schmidt, "Further Report on the Gonorrhœa Complement Fixation Reaction," *Ibid.*, 1912, vi. 370.

[5] Swinburne, "The Complement Fixation Test in Gonorrhœa," *Ibid.*, 1911, v. 21.

[6] Gardner and Clowes, "The Value of Specific Complement Deviation Reaction in Gonorrhœa as an Aid to Clinical Diagnosis," *Ibid.*, 1912, vi. 338.

is slight or *nil*. A marked positive reaction is a fairly certain proof of gonorrhœal inflammation, but a weak reaction, not confirmed by clinical findings, is looked upon as no more positive than a weak Wassermann.

The advantage of such a test is at once recognisable, and with increased knowledge of its possible errors, should be of the greatest value in treatment and prognosis. To be able to say with confidence that a cure is obtained will be a source of great relief to patient and practitioner, and will avoid the disastrous after-effects of the marriage of the still infected. It may have a medico-legal value in that it will be possible to distinguish a recent infection, when a negative, followed in three weeks by a positive reaction, is obtained. Joint troubles, without clinical evidence of gonococcal origin, may be differentiated, and other obscure affections due to the gonococcus elucidated.

C. FERRIER WALTERS.

OTOLOGY AND RHINOLOGY.

Direct Salpingoscopy.—The naso-pharyngoscope devised by Holmes was at first received as an interesting method for obtaining nearly as good a view of the same parts that can be brought under inspection by the posterior rhinoscopic mirror and the laryngoscope. But it is because we are enabled to inspect regions in the nasal passages and in the nasopharynx that cannot be seen by any other means that rhinologists have learnt to value the instrument of Holmes and others of similar pattern, which may well be likened to a very fine calibred cystoscope. And although much of the Eustachian orifice and the region around can be viewed by indirect rhinoscopy, with direct endo-rhinoscopy one certainly gets not only a different view, but often a much better view of the actual orifice of the tube, as well as of its anterior and posterior lips. Walker Wood has recorded an analysis of the nasopharyngeal findings in about 650 cases examined, and his results are instructive and valuable. There were forty abnormalities, in fifteen the Eustachian tubes being bifid, and in three there were adventitious openings. He figures cases of mucous polypus in the mouth of the tube, fibroma of the cushion, and a postnasal polypus; and these illustrations the author has permitted us to reproduce. In other of his figures one finds examples of adenoid remains in Rosenmüller fossa, and bands extending across the fossa, due to untreated adenoids and several varieties of salpingitis. As regards acute salpingitis, the author states that "this is, perhaps, the most important condition affecting the Eustachian tube, as its resulting effects are so grave. I have carefully

inquired into many hundreds of cases of chronic middle-ear catarrh, and in a very large proportion I have found that these patients suffered from attachs of ear-pain or ear-ache in childhood. These were attacks of acute or subacute middle-ear

Three examples of inflammatory conditions of the Eustachian Tube, as they appear on direct examination with the naso-pharyngoscope.

WALKER WOOD.

FIG. 1.

Mucous polypus in the mouth of the tube (right).

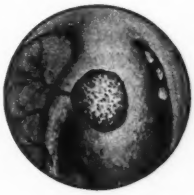


FIG. 2.

Fibroma of cushion. Adenoid granules in Rosenmüller's Fossa.

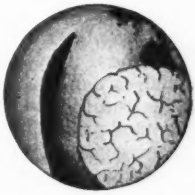


FIG. 3.

Postnasal polypus.

We are indebted to the Author, and to Messrs. Adlard & Son, for the loan of these blocks from the original article here abstracted.—ED.

catarrh, and salpingitis arising from adenoids, bad teeth, or chronically-inflamed tonsils." The symptoms of acute salpingitis are (1) pain in neck or ear, almost always ear-ache, (2) deafness, (3) tinnitus, (4) drum injected and red, (5) mouth of Eustachian tube is red, glazed and swollen, and there may be a slight exudate of mucus from the mouth. The swelling is confined to the mouth and the tissues immediately around it, and is not a general inflammation as in chronic salpingitis, while the minute vessels seen in health, and which are often engorged in chronic conditions, become obscured in acute conditions.

Malignant growths may arise at the mouth of the Eustachian tube, and the author states that "probably they are much more common than is supposed," and in early doubtful cases the naso-pharyngoscope enables the surgeon to remove a fragment for microscopical investigation with great precision.

The Operative Treatment of Tumours and Disease of the Pituitary Body was the subject of an instructive discussion in the Laryngological Section of the recent International Congress of Medicine held in London, and has also been pressed on our notice by many recent contributions and reported cases, and more particularly by the published work of Harvey Cushing, and a discussion on Diseases of the Pituitary Body at the Royal Society of Medicine. Schäfer, in his contribution on the structure and function of the pituitary body, states that this body is

developed partly from the ectoderm of the buccal cavity, partly from the neural canal, *i.e.* it is partly epithelial and partly nervous in origin, the former comprising two portions, the *pars anterior* and the *pars intermedia*. The anterior lobe appears to be related to the general growth of the body, the posterior lobe, which includes the *pars intermedia*, probably influences the contractility of plain muscle fibres, and excites activity in the kidney and mammary gland. With regard to operations on the pituitary body, it is recognised that the hypophysis can be approached either by the intra-cranial route or through the sphenoidal sinus (the extra-cranial route), and it is the latter which we are concerned with in rhinology. Though first suggested by Giordano in 1897, the trans-sphenoidal operation was first performed by Schloffer in 1907, when he successfully removed an hypophyseal adenoma. Various routes to reach the sphenoidal sinus have been adopted, viz. (*a*) the palatine route, *i.e.* by dividing the soft palate, and removing first the horizontal plate of the palate bones, and secondly the corresponding posterior portion of the vomer. This route was adopted twice by Durante and by Ballance in 1909. (*b*) By various operations involving external division of the nose, *e.g.* Ollier's operation, turning the nose up, Von Brun's operation, or Moure's operation, lateral rhinotomy, and Kanavel's method of turning the nose up (inverted Ollier operation), and Dialti's method of splitting the nose in the middle line, and turning the two flaps outwards. By whichever method the nasal passages are laid open, the septum has to be largely removed, and followed by the exenteration of the ethmoid cells, and the middle and inferior turbinals. (*c*) Endonasal routes. Of these the only two methods that have been used in a considerable number of patients are (1) the Halsted operation suggested by Löwe, and first performed by Halsted, and later adopted by Cushing, and (2) the Hirsch method. The Halsted operation begins with a transverse sublabial incision, as in the Rouge antral operation, followed by submucous resection of the septum, and carried out after upward retraction of the upper lip.

Hirsch first carries out an ordinary Killian resection of the septum right back to the anterior wall of the sphenoidal sinuses, then widely separating the two layers of mucous membrane by strong, long Killian dilating forceps, he crushes the middle turbinals against the outer walls of the nasal passages, and thus exposes to view the anterior walls of the sphenoidal sinuses. The anterior walls of these sinuses are then removed, and with bone-cutting forceps the sphenoidal sinus septum is removed, thus exposing to view the posterior wall of both sinuses. A transverse incision is made in the anterior wall of the sella turcica by means of a chisel, then with a special hook-shaped elevator

inserted between the bone and dura, follows, the removal of this portion of the posterior sinus wall corresponding to the pituitary fossa, and then with a nibbling bone forceps the dura is exposed over as large an area as feasible, and a flap of the dura turned down. The exposed tumour is then pierced, to ascertain whether it is cystic or solid. If the former, as much of the cyst wall is excised as possible; if solid, it is removed with a curette, working mainly from above downwards. Finally, a strip of iodoform gauze is inserted between the muco-periosteal flaps. The disadvantage of the Hirsch operation lies in the distance to be traversed before reaching the tumour, and the necessity of working through the somewhat narrow passage between the blades of the long Killian speculum. On the other hand, there are many advantages in this over all the methods which involve external rhinotomy, besides which every rhinologist being practised in the Killian submucous resection operation, is so thoroughly accustomed to working through the blades of the speculum, that the one disadvantage is largely discounted. What are the advantages of the Hirsch method? (1) Local anæsthesia by the application of cocaine and tonogen, and infiltration with Schleich's No. 2 solution suffices, and the operation is carried out in the sitting position. (2) Strict aseptic precautions are observed throughout the operation, and when the wound is finally packed the operative field can be left aseptic. This is impossible if the approach to the sphenoidal sinuses is made through the ethmoidal cells.

It is sometimes necessary to remove the middle turbinals if they are enlarged, and the nasal passages too much narrowed to afford room for the speculum to open sufficiently when the submucous resection has been made. Under such circumstances, a preliminary operation on the turbinals and ethmoidal cells is carried out. The sitting position of the patient is of great asssitance in finding one's way accurately to the sella turcica. In the course of a discussion in the Laryngological Section of the Royal Society of Medicine, O'Mallory stated that when in Vienna he had seen Hirsch operate in this manner in the out-patient department of the Allgemeine Krankenhaus, the patient being sent back to the ward, and there was no more hemorrhage in the course of the operation than one usually sees in a submucous resection.

Hirsch in his communication to the International Congress gave statistical results on thirty-five cases in which he had operated. In his first twenty-five cases reported previously he had three deaths, giving a mortality of 11.5 per cent., and with two other cases successfully operated on by Spiess and Holmgrew by the septal route the mortality was reduced to 10.7 per cent. The report of his later results are not yet available.

Two cases operated on by British rhinologists by the endonasal route have recently been placed on record. Graham operated under intravenous ether anæsthesia in 1912, making an incision in the mid-line from the tip of the nose to the upper lip, so as to divide the columella and expose the free edge of the septal cartilage, and then a Killian septal resection was performed, and the operation completed in the manner described as Hirsch's operation. The patient left the hospital very much relieved twenty days after the operation. A second operation was performed two months later, the approach to the sphenoidal sinus being made through the left nasal fossa proper, as it was felt that there would be difficulty in separating the septal flaps of the previous operation, but the patient died suddenly, collapsed thirty hours after the operation. Hill operated on a

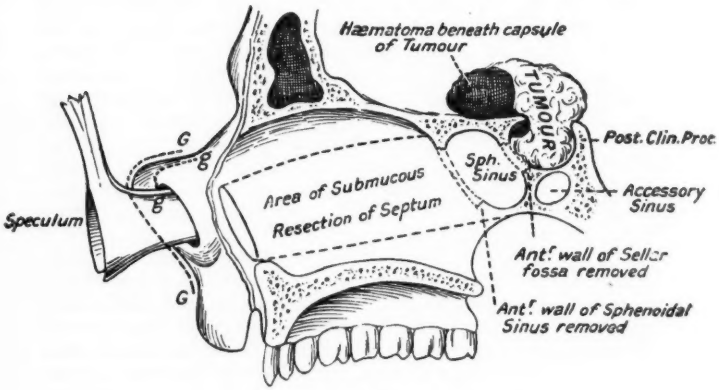


FIG. 4.

Diagram by Dr. Wm. Hill of the endonasal operation (Killian-Hirsch method) performed by him. The Killian speculum should have blades 9 cm. long in order to reach the sphenoidal sinuses. The alternative incisions used by Mr. Graham are indicated by dotted lines at GG and gg.

Block kindly lent by Dr. Wm. Hill.

patient by Graham's modified Hirsch method, but she died from hemorrhage eight hours later. The case was found *post-mortem* to have been unsuitable for operation, but there was no means of ascertaining this beforehand. In both these cases the misery of the patient's condition before operation was such as to justify the grave risk which must always attend any operation on the pituitary body, but such operations cannot be commended in cases which do not present grave symptoms.

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P. WATSON-WILLIAMS.

Reviews of Books.

A Manual of Surgical Treatment. By Sir W. WATSON CHEYNE, Bart., C.B., and F. F. BURGHARD, M.S., F.R.C.S. New Edition, entirely revised and largely re-written with the assistance of T. P. LEGG, M.S., F.R.C.S., and ARTHUR EDMUNDS, M.S., F.R.C.S. Volume IV. Pp. xxvii, 622. London: Longmans, Green & Co. 1913. Price 21s. net.

This volume deals with affections of the jaws, nasopharynx, tongue, mouth, pharynx, œsophagus, stomach, and intestine. Thus it embraces a large proportion of that domain of surgery in which the greatest activity and most recent advances have been made. Considering the generally conservative tone of this work, the present volume represents perhaps more than others of the series the modern methods of treatment. In the injuries and diseases of the jaw there is but little new matter, but opportunity is taken to introduce the subject of intravenous etherisation and intratracheal insufflation anæsthesia in connection with the removal of jaw tumours. In the surgery of the tongue Butlin's methods of partial resection for leucoplakia and excision for cancer are closely followed. Due prominence is given to the enucleation of the tonsils, though there might be a greater insistence upon the necessity of this replacing mere tonsillotomy as the routine practice. In the description of gastrostomy the operations of Witzel, Kader-Senn and Franck

are presented as though of equal merit. There is an excellent account of "exploratory laparotomy," together with remarks as to the closure of the incision. Silk is said to be the suture for all the abdominal layers, even the skin (catgut is mentioned in Figure 81 for the peritoneal layer, though silk is spoken of for this in the text). We should have thought that porous silk had nothing to recommend it in the superficial layers.

The section on intestinal obstruction is illustrated by many good new figures.

In the chapter on appendicitis, the modern view that every case should be operated upon as early as possible is stated more than once, but not quite with the earnestness of complete conviction. Such statements as "advise appendicectomy after the patient has had one attack" (p. 412), and "opinions differ as to the period at which the operation should be performed" (p. 420), afford too much justification for the common practice of "wait and see" which so often proves disastrous. We are glad, however, that the early operation is regarded as ideal, and that the appendix is always to be removed.

In dealing with hernia, a judicious selection has been made of the many operations for "radical cure." We think, however, that two points in connection with femoral hernia might be improved. First it should be stated that the ideal aimed at by a truss can never be attained, because no truss can obliterate the crural canal. Second, the radical operation by which the conjoined tendon is sutured to the pectineal fascia deserves mention. The use of silver wire filigrees for ventral hernia is advocated, without mentioning that in most cases these structures become broken and disintegrated within a year of the operation.

In the article on cancer of the rectum very brief mention is made of the abdominal method of extirpation, and here as elsewhere there might be more space devoted to definite advice as to the choice of methods suitable for different cases.

The book makes one of the most complete and valuable textbooks of reference on the subject of abdominal surgery that have appeared in recent years.

Beiträge zur Ösophagus-Chirurgie. Von Dr. ALWIN ACH. iv, 136, S. München: J. F. Lehmann's Verlag. 1913. Preis M.4.

In this book the reader will find descriptions of most of the methods which have been employed by the author and other surgeons in resection of the œsophagus. More particularly the author describes his own operations of the kind, carried out on fifty-five dogs and five human beings, the latter having been

patients suffering from carcinoma of the œsophagus. The results of the operations were not brilliant, the best being, we found, that a dog survived over three months and a man survived seventeen days. It is clear, therefore, that the difficulties and dangers of removing a portion or the whole of the intrathoracic part of the œsophagus are immense. Still advances are being made, and some of the lines taken in the progress are well indicated in this work. For example, the author has evolved and proved the practicability of removing the upper segment of a divided intra-thoracic œsophagus by invagination from below upwards. To effect this an instrument is passed down the œsophagus from the mouth to the divided and ligatured end, attached there, and used for traction. Subsequently an evagination is made through an incision in the neck, and the œsophagus thus transplanted externally for œsophagoplasty.

Though the writer's results, like those of other pioneers in this branch of surgery, leave so much to be desired, yet they inspire hope for the future, and the records of his investigations and experiences here given demand the serious consideration of all surgeons who contemplate attempting resection of the œsophagus.

Text-Book of General Pathology. Edited by M. S. PEMBREY and J. RITCHIE. Pp. xii, 773. London: Edward Arnold. 1913. Price 18s. net.

The term General Pathology through usage has become associated in the minds of the profession with something very different in detail if not in principle from the exposition of the subject provided in this book, and it seems to us unfortunate that in endeavouring to awaken the profession to a true conception of Pathology, the editors have agreed to accept the old-established title associated so much in the past with a study of morbid processes. The title "Applied Physiology," or more correctly "Clinical Applied Physiology," would have been very suitable, and would have indicated the scope of the text and assisted in introducing the volume to those for whom in our opinion it is a necessity, the practising physician and surgeon, and students reading for research and the higher qualifications.

The authors of the many articles have covered the ground thoroughly, and there is astonishingly little repetition or overlapping. As is to be expected, the different writers vary much in their power to sustain the interest of the reader in their subjects; nevertheless there are few dull pages in the book, and bearing in mind that they have set out as pioneers of a wider knowledge and understanding of Physiology and Pathology,

they are to be congratulated on the lucidity of their exposition of subjects that are often obscured by technicalities, and on avoiding the pitfall of hypothesis and theory, as useless to the clinician as they are valuable to the investigator.

The book ought to be in the hands of every medical man who cares to advance with the times, and on the laboratory shelf of those who desire to lead the van of progress.

Diseases of the Eyes. By C. DEVEREUX MARSHALL, F.R.C.S. Pp. xiii, 303. London: University of London Press. [1912]. 10s. 6d.

This is a text-book for students and practitioners who, although doing a certain amount of eye-work, cannot be considered experts.

It is a book full of knowledge, and also, which does not always follow, full of wisdom.

The subject is covered in a very comprehensive manner. It makes interesting reading, and unlike many text-books, it is not like a dictionary, so that it can be read with pleasure. The student is lucky who selects this book from which to learn his eye work.

There are articles written by Claud Worth, Bishop Harman and Harrison Butler on the various operations they have themselves devised. Probably this accounts for the fact that the picture of Worth's squint operation appears upside down as it did in his own book.

There is a very good chapter on colour vision, which is supervised by Edridge Green. It makes the subject clear and comprehensible to the ordinary medical reader.

We can confidently recommend the book.

Diseases of the Throat, Nose and Ear. By W. G. PORTER, M.B., B.Sc. Pp. xii, 275. Bristol: John Wright & Sons Ltd. 1912. Price 7s. 6d. net.

In the preparation of such a work for the student and general practitioner the author is always faced by the great difficulty of deciding what should be omitted and what retained. On this occasion the effort has been eminently successful. Although only a small book of some 270 pages, the practitioner will find that none of the essentials in diagnosis and treatment, which lie within his sphere, have been omitted. The facts are clearly stated, and while the newest work is introduced, it is always easily understood. The more important lesions are represented in some excellent coloured plates prepared for this work. The

pre-eminent importance of indicating the earliest danger signals in such serious conditions as malignant disease of the larynx and the intracranial complications of middle-ear disease is recognised and fulfilled.

Both author and publishers are to be congratulated on the production of a work which should supply a decided want.

Modern Wound Treatment and the Conduct of an Operation. By Sir GEORGE T. BEATSON, K.C.B., M.D. Pp. v. 106. Edinburgh: E. & S. Livingstone. 2s. net.—The scope of this little work is fully indicated by its title. It contains a complete and systematic account of aseptic and antiseptic technique. One finds here and there an indication that the author belongs to the conservative school of surgeons. As instances of this tendency, one may mention his non-insistence on the necessity for rubber operating gloves, his preference for antiseptic dressings, even if they are sterilised by high-pressure steam, and the scanty notice of the prominent part played by iodine in modern surgical practice. The recommendation to sterilise silkworm gut and horse-hair by boiling in soda solution must surely be an oversight. But these are small blemishes in a work which, if it contains nothing that a practising surgeon does not carry at his finger-tips, should prove of considerable use to nurses and students commencing clinical work, telling them clearly what to do and why it should be done.

A Practical Text-Book of the Diseases of Women. By ARTHUR H. N. LEWERS, M.D., F.R.C.P. Seventh Edition. Pp. xi. 540. London: H. K. Lewis. 1912. 12s. 6d. net. —The fact that this book has successfully reached a seventh edition shows that its merits are recognised. We know that many students appreciate the help in differential diagnosis afforded by the lists of conditions, all presenting some common features, which are to be found scattered through it in their appropriate sections. The present volume is superior to its predecessors in many ways, amongst them in being enriched by numerous micro-photographs of morbid tissues and actual photographs of specimens in the place of the older fashioned drawings. The whole book is brought thoroughly up to date, the description of Wertheim's operation being particularly lucid and the discussion of the indications for operation in cancer of the cervix full and good. The author's arrangement of the subject-matter appears to us to be confusing, and the interpolation in the text of the numerous and detailed case-histories, though these are individually interesting, likely to break into the train of ideas and hinder the grasp of the subject as a whole. Some of the coloured

illustrations are good, but in others the colours are not very like those of the actual specimens. Dr. Lewers' style is pleasant and the book easy to read. We predict for the present volume a continuance and increase of the popularity enjoyed by the previous editions.

Obituary.

HUBERT LISTON WILLCOX.

THE death of Mr. Hubert Liston Willcox, of Warminster, at the early age of 36, occurred on Dec. 3rd, and was due to blood poisoning, resulting from a finger being scratched while assisting at an operation for acute peritonitis. He was educated at King's College Hospital, London, and took the qualifications of L.R.C.P. and M.R.C.S. in 1901.

For the untimely loss of his son under such singularly sad circumstances, we extend our heartfelt sympathy to his father, Dr. R. Lewis Willcox, with whom he was in practice at Warminster, to his widow, mother, and other members of the family. Mr. Willcox had a peculiarly attractive personality, and while commanding the confidence of many of the best families in the county, he was equally popular with his poorer patients, who always felt that he was a friend who would never spare any effort on their behalf, and practically the whole town of Warminster and the surrounding district mourned his death.

DR. HENRY SKELTON.

HENRY SKELTON, M.D. St. And., died on December 8th, after a short illness, at the age of 71, having given forty-four years of strenuous medical work to a large area surrounding his residence at Downend.

He held many medical appointments in Downend, Frenchay, Hambrook, Keynsham, Mangotsfield, Stapleton and Warmley. He was a man of wide sympathies and considerable ability, and was accordingly much respected as a very popular practitioner of medicine and surgery. He was devoted to the church and to music. A Freemason and a Conservative politician, he was also a member of many committees embracing a large number of useful objects, and did some good work in training nurses for the British Red Cross Society.

"A man he was to all the country dear."

He will be greatly missed by the members of the many societies for which he worked, and by his *clientele* of patients, in whom he inspired great confidence.

Editorial Note.

The Training of Nurses.

From the New York State Education Department a *Report on Higher Education* for the year ending July, 1912, has just been published. The scientific investigation of methods and results in teaching which has been carried out for some years past in the United States of America has earned the admiration and gratitude of all the world. The present report deals with many branches of education, but the section which we desire to single out for comment and commendation is that upon the education of hospital nurses. Since the passing of the Nurse Practice Act in 1903, providing for the registration of nurses, gradual progress has been made towards the standardisation of nurses' training in hospitals, and by slow collection of experience the Education Authorities (the "Regents") of New York State have endeavoured to place the various training schools upon a sound professional basis.

A most important measure was adopted in 1906, namely the requirement of proof of at least a course of one year in a secondary school. Acting with cautious wisdom, this evidence of preliminary education was interpreted at first somewhat loosely, but the conclusion arrived at is that "the dearth of pupils appears to be greater in the schools of poor standards of admission, etc., than in those of higher requirements." Complaint was made that "the restriction of the admission of probationers is working a hardship on hospitals which are conducting properly equipped and ethically administered training schools." The reply has a fine directness about it: "No school can be considered as ethically conducted which would break down standards which are not excessive for the purpose of securing a sufficient number of probationers to maintain an unpaid nursing service." The "Regents" realise this, and in the face of opposition maintain that the training of nurses as a branch

of education requires to be considered quite apart from the immediate supply of attendants upon the sick in any particular hospital. This to English ideas is an almost new view point. The report expresses great concern as regards *the overstrain of nurses.* It is urged that the hours on duty are too long, averaging sixty-two hours weekly on day duty, and eighty hours on night duty; that the proportion of time allotted to theoretical instruction is insufficient, and that this instruction takes place either during the so-called hours of recreation or during the evening; and that except in a few schools that have established preliminary courses no time is allowed for study. The main part of the criticisms is applicable to our British hospitals. So too is the following indictment: "The age in many of the schools has fallen in the past few years from 23 to 19, 18 and even 17. That pupils so immature should be placed after a few months in the hospital, frequently less than three, in sole charge of from ten to sixty patients, and without relief for eleven to twelve hours nightly, is little short of cruelty. Such long hours and such responsibility produce not only physical weakness but a dulness of the perception and sensibilities, with a resultant deterioration in the quality of the service rendered, and are therefore as detrimental to the patients' welfare as to the pupils'."

These are strong words of the New York "Regents," but they are none too strong. With a few praiseworthy exceptions, the condemnation falls equally upon our English hospitals, and it behoves the authorities of our more enlightened training schools, as well as the medical profession, to exert their united endeavours to bring about a long overdue reform.

The enthusiasm of the Americans for sound education is no new upstart. We shall be following no ill leaders if we adopt their reforming zeal, and clothe ourselves with a corner of the mantle inherited from that General Court of Massachusetts which in 1647 established schools in every township, "to the end that learning may not be buried in the graves of the forefathers."

Therapeutic Notes.

GALACTOGOGUES, OLD AND NEW.

It is the very general opinion of experienced physicians that little can be done to increase the secretion of milk in nursing mothers beyond such general measures as are included in the diet and hygiene of the puerperium. Nor is this surprising, considering how greatly the secretion of the lacteal glands differs from that of all the other glands in the body, and what a tremendous metabolic activity is implied in the elaboration of a fluid so rich in organic substances, fatty, albuminous and carbohydrates.

Three of the larger modern text-books on pharmacology and therapeutics do not include the word galactogogue in their indices. Older works mention two, alcohol and pilocarpine. The administration of alcohol is in many cases undesirable, and in all inefficacious, except possibly in a very secondary way. Pilocarpine is also discredited; if it has any action at all on the mammary glands it is most uncertain, and it has never been shown to increase the solid constituents of the milk. Of late years, however, three substances have been introduced which have been stated to act as galactogogues, and in view of the importance of breast-feeding, it is desirable that their possible value should be carefully considered, and a trial given to such of them as may, *prima facie*, seem likely to be of value.

The first of these is known under the trade name of *Galegol*, and is obtained from the plant *Galega officinalis*, by extraction at a low temperature. The plant is one of the large family of leguminosæ, and is used in Southern Europe for feeding milch cows. Galegol consists of a brown granular soluble substance, the taste of which is not unpleasant, and it is administered in doses of two teaspoonfuls to one tablespoonful *per diem*, mixed in milk or some other convenient vehicle, at a temperature not above 98.6° F. It does not appear to be uniformly successful, and in cases in which the quantity of milk increased, it is difficult to say how far this was due to other factors. At any

rate, in some cases, in which the drug was suddenly discontinued, no decrease in the amount of milk was observed.

The next substance goes by the name of *Lactagol*, and is an extract of cotton seed (or hemp seed), the active principle of which is said to be the vegetable protein called Edestine. Cotton seed has for some time been used in feeding milch cows, but is unsuitable for medication in the human subject, owing to the presence of various indigestible and irritating ingredients. In the process of manufacture the seeds are first finely powdered, and the oily and resinous portions removed by extraction with ether or benzine. An infusion of the residue contains the active principle, which is thus freed from colouring matter and other impurities. The watery substance is evaporated *in vacuo*, and then ground into a fine brown powder, consisting almost entirely of protein, which swells up on boiling, but is not soluble in water. The dose is one teaspoonful stirred into a paste with cold milk, to which warm, but not hot, milk, or some other convenient vehicle can be added. It may be given three times daily. A good many favourable clinical reports have been made on *Lactagol*, and it certainly seems worthy of an extended trial, especially as it is apparently quite harmless.

The third substance is an extract of the posterior portion of the pituitary gland, which may be injected subcutaneously, or into the deeper tissues. Professor Schäfer's earlier experiments on cats showed that a considerable flow of milk followed the injection of pituitary extract, but further investigations seem to show that its value is not so great as at first appeared. It is apparently true that a flow of milk can be excited by pituitary extract in women ; thus Mackenzie reported that in a woman who had only one breast available for lactation, an injection caused a flow of 100 c.c. of milk one hour after the breast had been pumped dry. But the very careful experiments of Gavin on cows led him to the conclusion that although doses of pituitary extract caused an increased collection of milk in the lower part of the udder, there was no increase in the total quantity secreted *per diem*, and no improvement in the quality of the yield. A single case in the human subject reported by Sumpter seems

to corroborate this result. The experiment was made on a young married woman aged 28, who was nursing her second child. The milk, after five months' lactation, was beginning to fail. Four injections of 1 to 1.5 c.c. of pituitary extract, each c.c. of which represented 0.2 gram of fresh posterior lobe, was injected at intervals of two or three days. Shortly, the result was some immediate effect in increasing the flow, but longer intervals of rest between the feedings became necessary, and the gradual decrease in the total amount of the secretion continued. Until further evidence, therefore, is available, pituitary extract cannot be regarded as a practical galactogogue. Sumpter also experimented on the same subject with extract of the corpus luteum of the sheep, three injections of 2 c.c. (representing 0.1 gram of the dry substance in each c.c.) being given without any marked effect. The full reports of these experiments will be found in the *Quarterly Journal of Experimental Physiology* for the present year.

J. M. FORTESCUE-BRICKDALE.

The Library of the Bristol Medico-Chirurgical Society.

The following donations have been received since the publication of the List in September.

November 29th, 1913.

Barclay J. Baron, M.B. (1)	33 volumes.
F. R. Cross, M.B. (2)	5 ,,
F. H. Edgeworth, M.D. (3)	4 ,,
L. M. Griffiths (4)	25 ,,
Victor Horsley (5)	1 volume.
The Middlesex Hospital (6)	1 ,,
Sir William Osler (7)	2 volumes.
Arthur P. Prowse, M.D. (8)	1 volume.
R. Shingleton Smith, M.D. (9)	4 volumes.
James Swain, M.D. (10)	1 volume.
E. T. Wilson, M.B. (11)	67 volumes.

Pamphlets have been received from Dr. James Swain and Dr. E. T. Wilson.

NINETIETH LIST OF BOOKS.

The titles of books mentioned in previous lists are not repeated.

The figures in brackets refer to the figures after the names of the donors, and show by whom the volumes were presented. The books to which no such figures are attached have either been bought from the Library Fund, or received through the *Journal*.

Acland, Sir H. W.	*Oxford and Modern Medicine* .. .. .. (11)		1890
Allbutt, T. C. ..	*The Harveian Oration* .. .. (11)		1900
Andrew, J.	*The Harveian Oration*		1890
Andrewes, F. W. ..	*The Croonian Lectures* .. .. (11)		1910
Anstie, F. E. ..	*Stimulants and Narcotics*		1864
[Beale, L. S.] ..	*Vitality* .. .. (11)		1899
„	*The Structure and Formation of Certain Nervous Centres* .. .. (11)		1864
Benger, [—]	*Alimentary Enzymes* .. .. (9)		1912
Bloxam, C. L. ..	*Chemistry* .. .. (1)	3rd Ed.	1875
Bourne, A. W. ..	*Synopsis of Midwifery*		1913
Bridges, J. H. ..	*The Harveian Oration* .. .. (11)		1892
Bruce, O.	*Lectures on Tuberculosis for Nurses*		1913
Bruce, W.	*Sciatica*		1913
Burghard, Sir W. W.	**Cheyne, and F. F.** *A Manual of Surgical Treatment.* (Ed. by T. P. Legg and A. Edmunds) .. .. .. Vol. V,	New Ed.	1913
Carpenter, W. B. ..	*Human Physiology.* (Edited by H. Power.)	8th Ed.	1876
Carson, T. G. ..	*Man's Responsibility*		1906
Chambers, T. K. ..	*The Harveian Oration* .. .. (11)		1871
Cheyne and F. F. Burghard, Sir W. W.	*A Manual of Surgical Treatment.* (Edited by T. P. Legg and A. Edmunds) .. .. .. Vol. V,	New Ed.	1913
Church, W. S. ..	*The Harveian Oration* .. .. (11)		1895
Cleveland, W. F.	*The Modes of Dying*		1870
Clifford-Smith, J. L.	[Ed.] *Hospital Management*		1883
Conn, H. W. ..	*The Story of Germ Life*		1897
Cornil and Ranvier.	*Pathological Histology* (Trans. by A. M. Hart) .. .. 2 vols (in 3) (1)		1882–86
Cox, R. [Ed.]. ..	*Selections from Phrenological Journal*		1836
Deaf, The, Handbook of Information relating to	.. ..		1913
Degrais, L. Wickham and P.	*Radium and Cancer.* (Trans. by A. and A. G. Bateman)		1913
Dickinson, E. H.	*The Medicine of the Ancients* .. .. (11)		1875
Dickinson, W. H.	*The Harveian Oration* .. .. (11)		1891
Dobell, H.	*Affections of the Heart*		1872
Donkin, H. B. ..	*The Harveian Oration* .. .. (11)		1910
Duckworth, Sir D.	*The Harveian Oration* .. .. (11)		1898
Edmunds, W. ..	*Sound and Rhythm*		1906
Eulenberg and P. Guttmann, A.	*Physiology and Pathology of Sympathetic Nervous System.* (Trans. by A. Napier)		1879

Farre, A. .. .. *The Harveian Oration* .. .. (11) 1872
Ferrier, D. .. .. *The Harveian Oration* 1902
French, H. .. .. *The Goulstonian Lectures* .. .. .. (11) 1908
Galton, D. .. .. *Construction of Hospitals* 1869
Gillespie, W. R. .. *The Argument, a priori, for the Being and the Attributes of God* 1906
Godlee, R. J. .. *Introductory Address* 1889
Gordon, W. .. .. *The Place of Climatology in Medicine* 1913
Gowers, W. R. .. *Epilepsy* 1881
Greeff, R. .. .. *Guide to the Microscopic Examination of the Eye.* (Trans. by H. Walker) .. .. .. [1913]
Green, T. H. .. .. *Pathology and Morbid Anatomy* (1) 7th Ed. 1889
Gull, W. W. .. *The Harveian Oration* .. .. (11) 1870
Guttmann, A. Eulenberg and P. *Physiology and Pathology of Sympathetic Nervous System.* (Trans. by A. Napier) 1879
Hall, F. de H. .. *Intrathoracic Aneurysm* .. .. .. (11) 1913
Harley, G. .. .. *On Sounding for Gall-stones* 1884
Hamer, W. H. .. *The Milroy Lectures* .. .. (11) 1906
Hardwicke, H. J. *Guide to European Universities* .. .. (4) 1878
Harris, J. D. .. .. *Lectures on Medical Electricity to Nurses* .. 1913
Harris, T. .. .. *Post-mortem Handbook* .. .. (1) 1887
Harvey, W. .. .. *Circulation of the Blood.* (Ed. by A. Bowie) 1889
Helfft, H. .. .. *Handbuch der Balneotherapie* 9th Ed. 1882
Hénocque, A. .. *Spectroscopie* .. .. (4) [N.D.]
Hewlett, R. T. .. *The Milroy Lectures* .. .. (11) 1909
Hirschfeld and J. B. Leveillé, L. *Neurologie* (Texte) 1853
Holland, Sir H. .. *Recollections of Past Life* .. 2nd Ed. 1872
Horsley, V. .. .. *Reprints of Papers by* .. .. (5) [V.D.]
Hurry, J. B. .. *The Ideals and Organisation of a Medical Society* 1913
Jamieson, E. B. .. *A Companion to Manuals of Practical Anatomy* 1913
Johnson, G. .. .. *The Harveian Oration* .. .. .. 2nd Ed. 1883
Kaltschmidt, J. H. *German-English Dictionary* .. .. 2nd Ed. 1855
Kenwood, L. C. Parkes, and H. R. *Hygiene and Public Health* 5th Ed. 1913
Kidd, P. .. .. .. *Lumleian Lectures* .. .. (11) 1912
Landois and W. Stirling, L. *Human Physiology.* 2 vols .. (1) 1885
Latham, P. W. .. *The Harveian Oration* .. .. (11) 1888
Leveillé, L. Hirschfeld and J. B. *Neurologie* (Texte) 1853
Levy, M. .. .. *Traité d'Hygiène.* 2 vols. .. .. .. (11) 1862
Liveing, R. .. .. *Handbook of Skin Disease* .. .. 5th Ed. 1887
Lugaro, C. .. .. *Modern Problems in Psychiatry.* (Trans. by D. Orr and R. G. Rows) .. [2nd Ed.] 1913
Luys, G. .. .. *Gonorrhœa.* (Trans. and Ed. by A. Foerster) 1913
Macdonald, A. .. *Heart Disease and Pregnancy* 1878
Mackenzie, J. .. *Diseases of the Heart* .. .. .. 3rd Ed. 1913
Maclean, C. .. .. *Epidemic and Pestilential Diseases.* 2 vols 1817–18
Miles, A. Thomson and A. *Manual of Surgery.* Vol. III 2nd Ed. 1913

Moxon, S. Wilks and W. *Pathological Anatomy* .. (1) 3rd Ed. 1889
Murchison, C. .. *Continued Fevers* .. .. (1) 1862
Otis, F. N. .. .. *Clinical Lessons on Syphilis.* 2 Vols. (1) 1883
Pamphlets. .. .. 2 Vols. .. .. (11) [V.D.]
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Pollock, J. E. .. *The Harveian Oration* 1889
Poore, G. V. .. *The Harveian Oration* 1899
Pye, [W.]. .. .. *Elementary Bandaging.* (Ed. by W. H. Clayton-Greene and V. Zachary Cope) 13th Ed. 1913
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Quekett, J. .. .. *On the Microscope* .. .. .. (4) 2nd Ed. 1852
Ramidge, F. H. .. *Curability of Consumption* 1861
Ranking, W... .. *The Elements of Bandaging* 1913
Ranvier, Cornil and *Pathological Histology* . (Trans. by A. M. Hart) .. .. .. 2 vols (in 3) (1) 1882–86
Rigby, E. .. .. *On Female Diseases*.. 1857
Rindfleisch, E. .. *Lehrbuch der pathologischen Gewebelehre* (1) 5th Ed. 1878
Roberts, Sir W. .. *The Harveian Oration* .. .. (11) 1897
Schnée, E. .. .. *Diabetes.* (Trans. by R. L. Tafel) 1889
Shepherd, A. B. .. *Natural History of Pulmonary Consumption* 1877
Sieveking, E. H. .. *The Harveian Oration* .. .. (11) 1877
Sims, J. M. .. .. *Uterine Surgery* .. .. (4) 1886
Sketches of Eminent Medical Men .. .. [N.D.]
Stirling, L. Landois and W. *Human Physiology.* 2 vols. .. (1) 1885
Swayne, J. G. .. *Obstetric Aphorisms.* (Ed. by W. C. Swayne) 11th Ed. 1913
Tardieu, A. .. .. *Dictionnaire d'Hygiène publique.* 4 Vols. (11) 2nd Ed. 1862
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Thorne, R. T. .. *Preventive Medicine during the Victoria Era* (11) 1888
Toogood, J. .. .. *Reminiscences of Medical Life* 1853
Verneuil, [—]. .. *De la Gravité des Lesions traumatiques chez les Alcoholiques* .. .. (11) 1871
Virchow, R. .. .. *Post-mortem Examinations.* (Trans. by T. P. Smith) .. .. (1) 1880
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West, C. .. .. *Diseases of Women* .. .. .. 4th Ed. 1879
Wickham and P. Degrais, L. *Radium and Cancer.* (Trans. by A. and A. G. Bateman) 1913
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American Association of Obstetricians and Gynecologists, Transactions of the .. .. Vol. XXV 1913
American Journal of Obstetrics, The .. .. .. Vol. LXVII 1913
American Journal of the Medical Sciences, The .. Vol. CXLV 1913
American Ophthalmological Society, Transactions of the, Vol. XIII, Pt. 2 1913
Archives of Medicine .. .. (11) Vols. I–III 1857–62
Archives of the Middlesex Hospital .. .. .. (6) Vol. XXX 1913
Bristol Health Report for 1912 1913
Bristol Port Sanitary District, Medical Officer's Report for 1912 .. 1913
Department of Neurology, Harvard Medical School, Papers of Vol. V 1912
Edinburgh Medical Journal .. .. N.S., Vol. X 1913
Edinburgh Obstetrical Transactions .. .. .. Vol. XXXVIII 1913
Glasgow Medical Journal, The .. .. Vol. LXXIX 1913
Hospitals—
Boston City Hospital, Medical and Surgical Reports .. (10) 1913
Episcopal Hospital Reports, Philadelphia .. .. .. Vol. I 1913
St. Thomas's Hospital Reports .. .. Vol. XL 1913
Imperial Cancer Research Fund, Scientific Reports of (2) No. II–V 1905–12
Journal of Experimental Medicine .. .. Vol. XVII 1913
Journal of Medical Research, The .. .. .. Vol. XXVII 1912–13
Journal of Obstetrics and Gynæcology, The .. .. Vol. XXIII 1913
Local Government Board, Supplement to 35th Annual Report of the (9) 1908
Medical Chronicle, The .. .. Vol. XXIV 1912–13
Münchener medizinische Wochenschrift .. .. Bd. I 1913
Ophthalmological Transactions .. .. Vol. XXXIII 1913
Parasitology .. .. Vol. V 1912–13
Philippine Journal of Science, The .. .. Vol. VII 1912
Practitioner, The .. .. Vol. XC 1913
Progrès médical, Le 1912
Progressive Medicine .. .. Vol. III 1913
Public Health .. .. Vol. XXIII 1909–10
Research Laboratory of New York, Studies from .. .. Vol. VI 1911
Revue hebdomadaire de Laryngologie .. Tom. XXXIV, Vol. I 1913
Royal Academy of Medicine in Ireland, Transactions of the Vol. XXXI 1913
Society of Medical Officers of Health, Transactions of the (11) 1881–84 1886
Surgery, Gynecology and Obstetrics .. .. Vol. V 1907

MEETINGS OF SOCIETIES.

Bristol Medico-Chirurgical Society.

Annual Meeting, October 8th, 1913.

After a vote of thanks to the retiring President, Dr. Walter C. Swayne, had been passed, Dr. P. Watson-Williams took the chair and gave an introductory address (*see* page 289). Later a cordial vote of thanks was given to Dr. Watson-Williams for his able and interesting address.

The Honorary Secretary, Mr. A. J. Wright, read the following annual report :—

During the year twelve new members have been elected, and eight have resigned. There is now a total of 4 honorary and 171 ordinary members.

The balance from the previous year was £77 11s. 2d., and on this year there is a balance of £20 12s. 2d., making a total balance to date of £98 2s. 4d.

The average attendance at meetings has been 32.

The Society will again in the near future have to move to temporary premises during the reconstruction of the old Blind Asylum buildings.

The Hon. Librarian, Mr. C. K. Rudge, then read the following report :—

The Library of the Bristol Medico-Chirurgical Society now contains 12,254 volumes. During the year 302 volumes have been added, and 22 volumes sold. The Library is in regular receipt of 191 periodicals, 163 by exchange and 28 by purchase.

During the year 793 issues of books on loan were made to the members of the Society, and 53 volumes were obtained from Lewis's Library at the request of members.

The Bristol Medical Library, to which members of the Society have access, now contains 22,799 volumes, and 252 current periodicals, made up in the following manner :—

BOOKS.

Bristol Medico-Chirurgical Society ..	12,254
University of Bristol	8,782
Bristol Royal Infirmary	1,189
Bristol General Hospital	574
Total	22,799

CURRENT PERIODICALS.

Medico-Chirurgical Society	191
University of Bristol	61
Total	252

The following are the officers of the Society for the Session 1913–14: President—P. Watson-Williams, M.D. Lond; President-Elect—W. H. C. Newnham, M.B. Cantab. Committee (*ex-officio*)—W. C. Swayne, M.D. Lond.; P. Watson-Williams, M.D. Lond. (Editor of *Journal*); C. K. Rudge, M.R.C.S. (Hon. Librarian); J. M. Fortescue-Brickdale, M.D. Oxon. (Editorial Secretary); A. J. Wright, M.B. Lond. (Hon. Secretary). (*Elected*)—R. Shingleton Smith, M.D. Lond.; G. Munro Smith, M.D. Bristol; G. Parker, M.D. Cantab.; I. Walker Hall, M.D. Vict.; F. Lace, F.R.C.S.; J. Lacy Firth, M.S. Lond.; J. O. Symes, M.D. Lond.; L. E. V. Every-Clayton, M.D. Lond.; Hon. Secretary, A. J. Wright, M.B. Lond.

RECEIPT AND EXPENDITURE ACCOUNT OF THE BRISTOL MEDICO-CHIRURGICAL SOCIETY, SESSION 1912-13.

	£	s.	d.		£	s.	d.
Balance from 1911–12 ..	77	11	2	University of Bristol, one Year's Rent	52	10	0
Members' Subscriptions	181	13	0	Honorarium (Farr) ..	10	0	0
Interest on Deposit ..	2	10	2	Postage and typing ..	24	9	0
				To *Journal*	45	19	8
				Grant to Library ..	30	0	0
				Telephone Rent	5	16	10
				Lantern	3	13	0
				Printing	5	14	3
				Expenses of Meeting ..	1	13	0
				University Marshal ..	0	10	6
				Cheque Book	0	2	6
				Petty Cash Disbursements	3	3	4
				Balance in Bank, Sept. 30th, 1913	98	2	3
	£261	14	4		£261	14	4

We certify that we have examined the above account with the books, papers, and vouchers produced to us, and found the same correct.

CURTIS, JENKINS & Co.,
Chartered Accountants.

Bristol, *7th October*, 1913.

November 12th, 1913.

Dr. P. WATSON-WILLIAMS, President, in the Chair.

The following new Rule was confirmed:—"The *Bristol Medico-Chirurgical Journal* shall have the exclusive right to

claim for publication all papers read at Meetings of the Society if the Editorial Committee so desires"; and also such an alteration to Rule 6 as may allow of an afternoon meeting being held.

A demonstration of apparatus for the production of intratracheal anæsthesia, by Mr. F. E. SHIPWAY (London), Mr. S. V. STOCK, Mr. J. D. FRY and Mr. E. W. HEY GROVES, was followed by a discussion (see pages 341 to 349).

Dr. NIXON read notes on a case of **Splenectomy for simple splenomegaly** (see page 325).

Mr. GROVES read notes on a case of **Splenectomy in Banti's disease** (see page 331).—Dr. WATERHOUSE (Bath), asked if it was recommended that the enlarged spleen due to congenital syphilis should be removed. He had lately used salvarsan and neo-salvarsan in such a case, associated with pharyngeal ulceration. The ulceration had been cured, but the spleen was unaffected.—Dr. FORTESCUE-BRICKDALE discussed the use of the term Banti's Disease. He did not consider Mr. Groves's case to be one of ordinary Banti's Disease.—Dr. JAMES SWAIN alluded to a case of splenectomy he had published in the *Bristol Medico-Chirurgical Journal*, in which the blood changes following the operation had been similar to those in Dr. Nixon's case.—Dr. NIXON, in replying, advocated splenectomy for all enlargements of the spleen causing trouble in the absence of myelogenous leukæmia.—Mr. GROVES also advised removing the spleen in every case of enlargement where there were abdominal troubles present.

Mr. J. LACY FIRTH gave the history of a case of **Abscess of the liver,** and showed the specimen. The patient, a man of 29, was first admitted to the Bristol General Hospital in February, 1913, with an abscess pointing in the epigastrium. He was operated upon an hour after admission, and a large quantity of pus evacuated from the left lobe of the liver. He left the hospital after a month, and returned to work. In October, having been doing ordinary work for five months or more, he was again admitted, complaining of constant cough, and pain in the back and left chest. He was intensely anæmic. A blood count showed secondary anæmia. By abdominal section a large abscess was opened and drained in the right lobe of the liver. The patient died a few days later. *Post-mortem* the healed scar of the first abscess was found, and also a third unopened abscess at the back of the liver, with its posterior wall close to the inferior vena cava. There was no peritonitis, but many ulcers of the amœbic dysenteric type were found in the large bowel. No history of dysentery could be obtained from the patient, and no symptoms of dysentery had been

observed during his stay in the hospital. The case illustrated some of the difficulties met with at times in diagnosing abscess of the liver, for the liver had not been enlarged or tender, and the pain had been in the opposite side of the chest. The speaker advocated exploration by abdominal section in such cases, rather than the use of the exploring syringe.

J. Lacy Firth.
A. J. Wright, *Hon. Sec.*

Local Medical Notes.

UNIVERSITY OF BRISTOL.

EXAMINATION RESULTS.

Students of the University have recently passed the following :—

Conjoint Examining Board of London.—*Final Examination.—Medicine :* R. B. Johnson, B. J. L. Fayle. *Surgery :* R. B. Johnson,* B.J. L. Fayle,* C. Kingston,* H. J. D. Smythe.*

L.D.S., R.C.S. Eng.—*Chemistry :* L. B. James. *Physics :* L. B. James, G. M. Haydon, W. G. Milton. *Dental Mechanics :* A. E. Young, C. M. Sheriff, W. A. Culverwell, E. E. Wookey, R. H. Turner. *Dental Metallurgy :* C. M. Sheriff, H. C. R. Aubrey. *Final Examination — Part I :* S. V. Shrimpton. *Part II :* R. H. Basker,* P. W. Flook,* E. W. Thomas.*

F.R.C.S. Eng.—*Primary Examination :* A. G. T. Fisher, D. G. C. Tasker.

University of London.—*M.B., B.S. Examination :* H. J. Orr-Ewing (Gold Medal), C. C. Harrison, E. S. Sowerby, F. W. Clemens. *Group I :* G. M. Campbell. *Group II :* H. J. D. Smythe, A. H. White.

APPOINTMENTS.

A. Rendle Short, M.D., B.S., B.Sc. Lond., F.R.C.S., Assistant Surgeon to the Bristol Royal Infirmary, has been appointed Hunterian Professor for 1914 and Examiner in Physiology for the Primary Fellowship at the Royal College of Surgeons of England.

* Denotes qualification.

E. W. Hey Groves, M.D., M.S. Lond., F.R.C.S., Surgeon to the Bristol General Hospital, has been appointed Hunterian Professor for 1914 at the Royal College of Surgeons of England.

R. C. Clarke, M.B., Ch.B. Bristol, has been appointed Assistant Physician at the Bristol Royal Infirmary.

H. W. Goodden, M.B., Ch.B. Bristol, M.R.C.S., L.R.C.P., has been appointed Senior Resident Officer at the Bristol Royal Infirmary.

H. J. Orr-Ewing, M.B., B.S. Lond., has been appointed House Physician at the Bristol Royal Infirmary.

E. W. Wade, M.B., B.S. Lond., has been appointed House Surgeon at the Bristol Royal Infirmary.

H. B. Walker, M.B., B.S. Lond., has been appointed House Surgeon at the Bristol Royal Infirmary.

J. C. B. Grant, M.B., Ch.B. Edin., has been appointed Ear, Nose and Throat House Surgeon at the Bristol Royal Infirmary.

N. H. Kettlewell, L.D.S., R.C.S., has been appointed Dental House Surgeon at the Bristol Royal Infirmary.

R. Ll. Jones, M.R.C.S., L.R.C.P., has been appointed House Surgeon at the Bristol General Hospital.

H. W. Parrot, M.B., B.S. Lond., has been appointed House Physician at the Bristol General Hospital.

B. J. L. Fayle, M.R.C.S., L.R.C.P., has been appointed Assistant House Physician at the Bristol General Hospital.

R. B. Johnson, M.R.C.S., L.R.C.P., has been appointed Casualty Officer at the Bristol General Hospital.

R. F. Bolt, M.R.C.S., L.R.C.P., has been appointed Resident Medical Officer at the Queen Victoria Memorial Hospital, Nice, Alpes Maritimes.

C. Kingston, M.R.C.S., L.R.C.P., has been appointed House Surgeon at the Bolingbroke Hospital, Wandsworth Common, S.W.

LONG FOX LECTURE.

The eighth Long Fox Lecture was delivered at the University on Tuesday, November 18th, by F. H. Edgeworth, M.D., D.Sc., Professor of Medicine. The subject of the Lecture was, " The cranial nerve, their motor nuclei, and muscle sensory fibres." The Vice-Chancellor of the University (Sir Isambard Owen) took the chair. The Lecture will be published in the *Quarterly Journal of Microscopical Science.*

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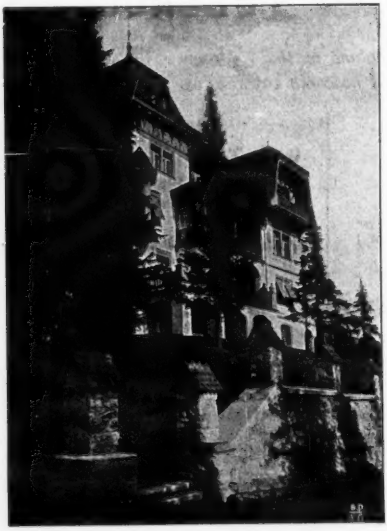

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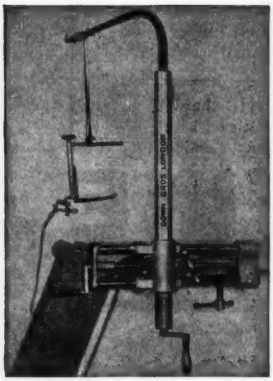

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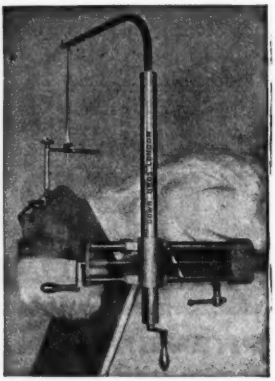

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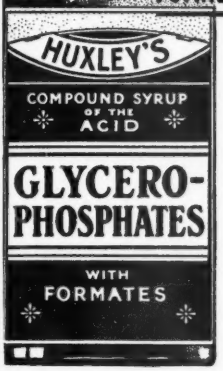

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Calcium Iodide has proved very beneficial in the treatment of Diabetes; the administration rapidly reduces the amount of sugar excreted, and in some cases a permanent cure is the result.

Dr. HARRY E. SMITH (*Practitioner*, February, 1910) reports the results of seventeen cases which had derived no benefit from Codeia, but which responded to the Iodide of Calcium treatment. He gives from 5 to 15 grains three times a day. Calcium Iodide has also been found useful in the treatment of Rickets.

Elixir Calcii Iodid. (Ferris) contains 2½ grains in each fluid drachm, and is a palatable preparation, *containing no sugar*. Dose, 2 to 6 fluid drachms.

PRICE—16 oz. bots., **2/6** each; 8 oz. bots., **1/5** each; 4 oz. bots., **10d.** each. In bulk (C. qts. and upwards) **2/2** per lb.

ELIXIR CARDIAC. COMP (FERRIS)

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PRICE. 2 oz. bots., **8d.** each; ½ lb. bots., **1 1** each; ½ lb. bots., **2**/- each; 1 lb. bots. **3/10** each. In bulk (C. qts. and upwards), **3/4** per lb.

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